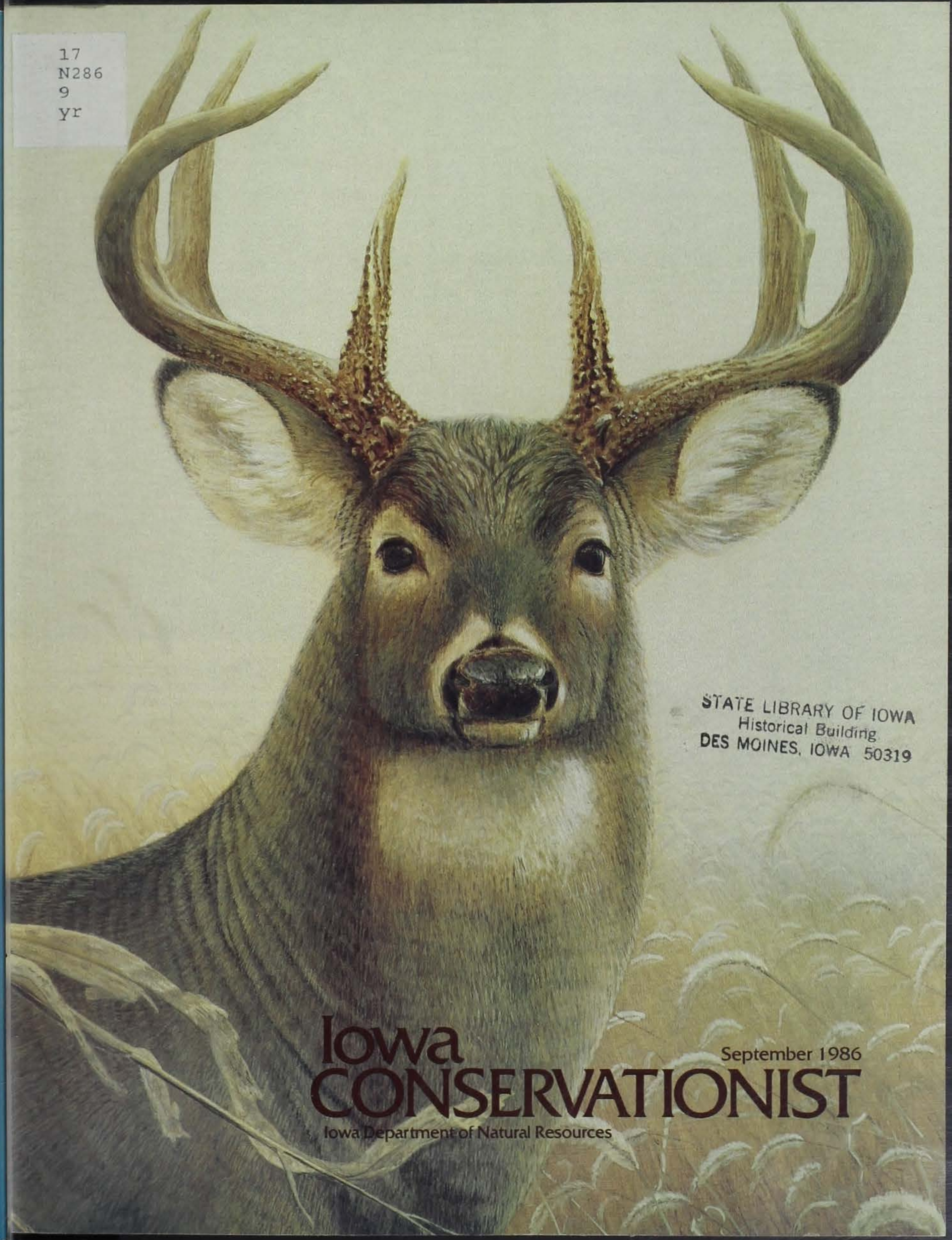

September 1986

Iowa CONSERVATIONIST

Iowa Department of Natural Resources

Iowa CONSERVATIONIST

Department of Natural Resources

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In This Issue

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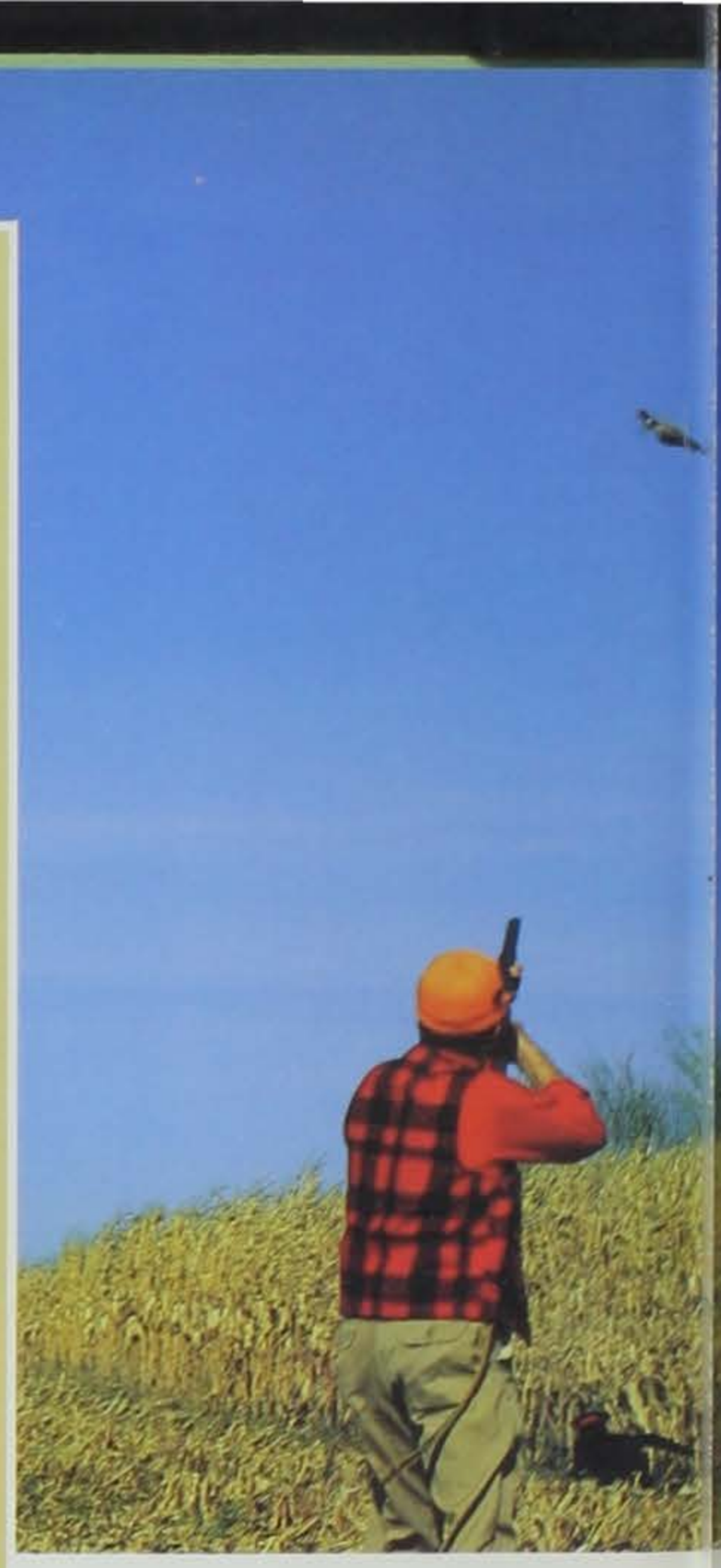


The Department of Natural Resources has recently approved a program to cost-share, with private or public conservation groups, establishing wildlife habitat on private land. Wildlife habitat stamp dollars will be used to develop temporary winter habitat plots in regions of Iowa where winter habitat is limited. Nongame tax check-off revenues and habitat stamp funds will be used to establish farmstead and feedlot shelterbelts.

The need for safe nesting and winter habitat in northern Iowa has long been recognized. However, economic pressures upon landowners have made them unwilling to take cropland out of production for wildlife habitat, or to leave odd acres or fencerows untouched. One good way to provide nesting habitat or winter cover for nongame, especially songbirds, is to establish high-quality farm shelterbelts or to increase the attractiveness of a farm grove by additional cover. This helps the farmer save energy and reduces

New Program Will Boost Wildlife

By Richard A. Bishop

Ron Johnson

snow removal around a farmyard while providing wildlife habitat. This program is a productive way to increase the habitat for nongame species in areas with extensive row crop agriculture.

New shelterbelts are long-term investments, but to provide instant winter cover for pheasants and other wildlife, a different approach is required. We have analyzed pheasant survey information and research data, and they show higher pheasant numbers following consecutive mild winters. This occurs even where the only nesting cover is in the road ditches. In these cases, adequate safe nesting cover is critically limited; but to a point, we can increase pheasant numbers by creating safe wintering areas. Establishment of winter habitat areas using cornfields or forage sorghum has great potential. Here are the conditions that make this such a timely and important program.

First, pheasant numbers have been below average because reduced nesting habitat and cool, wet spring weather have resulted in very poor production. Harsh winter weather in 1983-84 also reduced pheasant numbers. The winter of 1984-85 was mild, and pheasant survival was better than normal. Spring weather in 1985 was warm and dry, and a good productive effort was the result. The 1985-86 winter, although a snowy one, caught many farmers with standing crops in the field. These cropfields provided excellent winter cover for pheasants and other wildlife, and high survival was noted. Breeding populations this spring were much improved over the last two years; consequently, an increase in both nesting and winter habitat could result in a noticeable increase in the pheasant population.

The Food Security Act of 1986 (Farm Bill) has a provision to take highly erodible cropland out of production for ten years. This is called the Conservation Reserve Program. If the land had been farmed two out of five years during the period 1981 through 1985 and met certain erosion criteria, a farmer could bid a dollar amount that he would take annually to remove the land from production for ten years. Acres that qualified for the program are required to be seeded down to a grass-legume mixture, native grasses or planted to trees. A total of 10,835,000 acres of erodible land was eligible in Iowa, and the farm program would allow a maximum of 476,000 acres to be signed up during the first year. Following the initial year, the potential of a million acres a year could be signed up for the next four years. A total of 186,623 acres were bid by farmers during the first year, but only 101,609 acres were accepted by the Department of Agriculture. Those that were not accepted were rejected because the bids, according to officials, were too high. The top bids accepted ranged from $65 per acre in southern Iowa to $90 per acre in northern Iowa during the first sign-up for 1986, and $70 to $90 during the second bidding period. The national goal is to sign up 40 to 45 million acres over a five-year period. Hopefully, Iowa will come close to its potential of 4,476,000 acres.

In addition to the Conservation Reserve, the annual farm program required farmers to idle 20 percent of their 1986 corn acreage to be eligible for farm support payments. A high percentage of farmers participated in the annual program resulting in a large acreage being taken out of corn production. These acres require a cover crop which in most cases was oat seeding. The potential for nesting pheasants, if managed right, is substantial. Only time will tell if these acres are treated in a manner that provides good nesting cover. Unfortunately, much of this year's set-aside was mowed for hay just at the wrong time for nesting pheasants and very little safe nesting habitat was provided.

To summarize, we have higher numbers of pheasants and the potential for several million acres of nesting cover. The present limiting factor in much of northern Iowa is safe winter cover. The time is right and the Iowa Department of Natural Resources wants to capitalize on this opportunity to increase pheasant numbers in places where adequate habitat has

been lacking. Restricting hunting seasons or stocking pheasants is not the answer. It has been too expensive in the past to pay for nesting cover, but the farm program has opened that door. The time is right for a cost-sharing program for winter cover to better utilize the nesting cover provided by the farm program. It will fit into the farmer's existing operations.

Winter habitat demonstration areas will be selected in counties or portions of counties north of U.S. Highway 30. Each county will be eligible for at least one 36-square-mile demonstration area. Within each demonstration area, there will be six to ten winter cover plots so selected to provide adequate winter cover for wildlife within the 36-square-mile area. The demonstration areas will be selected by the local wildlife biologist in cooperation with the conservation group sharing project funding. These demonstration areas will be so selected to maximize the winter cover benefits to wildlife, mainly pheasants. Once an area is approved by the department, willing farmers will be selected and a contract between the landowner and the Department of Natural Resources specifying the obligations of both parties will be signed. If more than one project is submitted per county, the demonstration area or areas will be selected on the basis of site suitability, the existence of other winter cover, and the availability of nesting habitat. Projects with matching funds from the private sector will be given priority.

During the first year, applications and contracts must be submitted by September 30, 1986. In succeeding years, applications and contracts must be received by April 15.

Individual cover plots must be at least three acres if they are located next to suitable winter cover or five acres if other winter cover is lacking or inadequate. Larger plots may be specified by the department wildlife biologist. These plots will be accepted or designed by the biologist to fit individual habitat situations.

Cover plots left standing throughout the winter will be one of the following:

1. Standing corn
2. Standing corn in combination with grain sorghum
3. Standing corn and forage sorghum
4. Grain sorghum in combination with forage sorghum

No grazing, mechanical disturbance or harvesting will be permitted until after March 15. The department will provide cost-sharing at the following rates:

1. Up to $55 per acre for standing corn planted in annual set-aside acres.
2. Up to $70 per acre for standing corn or agricultural ground.
3. Up to $50 per acre for corn and sorghum.
4. Up to $30 per acre for forage sorghum and grain sorghum.

Payments will be made to the landowner after March 15 and an inspection by the department biologist.

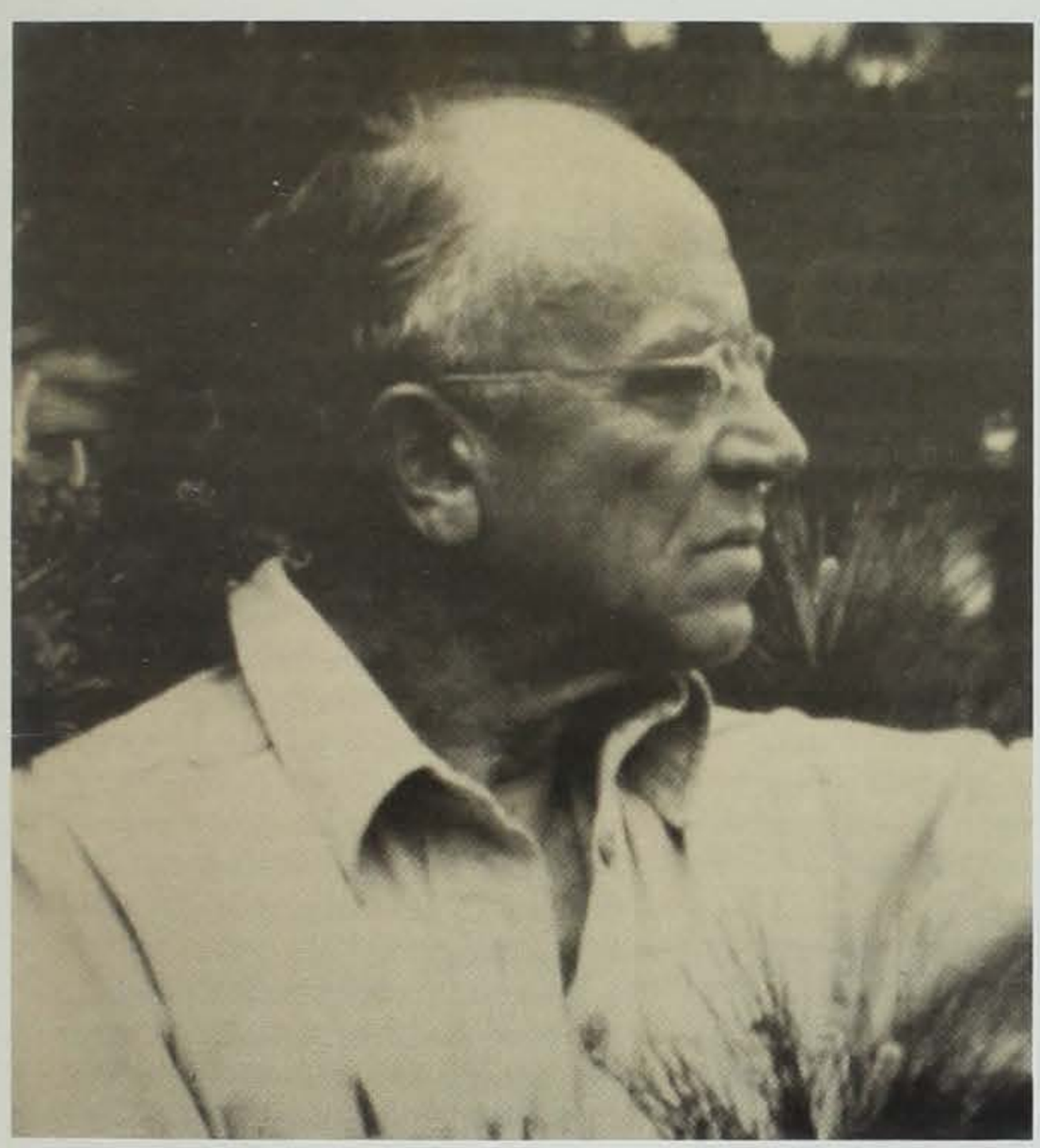
Eighty-thousand dollars from the sale of habitat stamps will be used to cost-share with $80,000 from conservation groups such as Pheasants Forever, county conservation boards, and various conservation clubs. These funds will provide for approximately 55 of these 36-square-mile wildlife demonstration areas. This program will effect 1,980 square miles and will have a measureable impact on pheasant numbers in northern Iowa. Increased brood stock and increased nesting cover provided by present farm programs makes this opportunity an exciting one. Standing corn or sorghum-corn plots will provide the winter cover and food to complete the necessary requirements for pheasants. Pheasant numbers should increase all across northern Iowa regardless of this program, but severe winter storms will cause high mortality in areas where secure winter cover is not available. This has happened over the last 15 years.

We have impressed upon the public that habitat is the key to pheasant abundance, and that closing the season or stocking birds is not going to bring pheasants back. Research studies in Iowa have shown that stocking birds did not increase pheasant numbers after the initial stocking period, nor did pheasant numbers in southern Minnesota increase during closed and reduced seasons more than populations in northern Iowa where a reasonably long pheasant season was continued. Intense row-crop agriculture with very little nesting cover in the form of hayfields, oats or old uncropped areas has been the main reason for reduction in pheasant numbers. At the same time, loss of safe winter cover has compounded the problem of pheasant survival.

Hopefully, this program will not only increase pheasants but will demonstrate that if we want pheasants we need to provide them safe nesting cover, winter cover and food. We are very excited about the potential that lies ahead in the next four years, and the department certainly intends to take full advantage of this opportunity.

Ron Munkel

Richard Bishop is the wildlife bureau chief for the department. He holds a B.S. degree from Iowa State and an M.S. degree from the University of Arizona. He has been in wildlife research and management for 20 years.



Sharon Kaufmen

Aldo Leopold's "shack" in Sand County, Wisconsin.

Aldo Leopold 1887-1948

A CENTENNIAL CELEBRATION

By Paul Kirpes

To commemorate the teachings and philosophy of Aldo Leopold, the nation's first Leopold Centennial Celebration will be held Oct. 5-9 at Iowa State University in Ames. The admission is free, and all events are open to the general public. Sponsors include the Iowa Department of Natural Resources, the Iowa Humanities Board, the ISU Achievement Foundation, the Burlington Hawk Eye Newspaper, National Ducks Unlimited, ISU Lectures Committee, ISU Chapter of Sigma Xi — a professional science honorary, and other ISU departments and organizations.

Aldo Leopold: The Man

The preface to Susan L. Flader's biography of Aldo Leopold (*Thinking Like A Mountain*) reads as follows:

"Aldo Leopold (1887-1948) is best known as the author of *A Sand County Almanac,* (1949), a volume of nature sketches and philosophical essays recognized as one of the enduring expressions of an ecological attitude toward man and land. To many who know him through these essays, he is akin to Thoreau because of his keen observation, his philosophic penetration, and his clarity of expression. Yet he was also an internationally respected scientist and conservationist, instrumental in formulating policy and building ecological foundations for two new professions in twentieth century America, forestry and wildlife management. During his professional career, he published several books and nearly 350 articles, most of them on scientific or policy matters. His life spanned a period during which scientific and technical advances were being made that could provide support for a fundamental change in the relationship of Americans to their environment."

Aldo Leopold was as much a philosopher as he was a forester, wildlife ecologist and conservationist. He articulated a philosophy of wilderness that grew as he grew, developing into an enduring concept of the relationship of man and land. And although social scientists, archaeologists and historians would approach the question of "who was Aldo Leopold" from varying angles, let's pursue the question from two perspectives: his life and his philosophy.

His Life

"Just before the turn of the last century, the average American was still fighting the wilderness, though most of the wilderness no longer existed. The nation was in the midst of the industrial revolution and the railroad connected the east with the west and the north with the south. The bison were only a remainder of the great herds that once were present. Market hunting of wildlife was widespread, but only where enough targets remained. And much of the American forests had been chopped down by loggers." This is how Daniel J. Vander Weyden, in "A Man Sharing the Land," described the land and times into which Aldo Leopold was born.

Leopold was born in Burlington, Iowa on Jan. 11, 1887, and his parents raised him to appreciate and enjoy the outdoors. Through his childhood experiences along the Mississippi River bluffs, he developed aesthetic and philosophical awareness, as well as ethical disciplines. It was there in Burlington that Aldo's love affair with the outdoors began as his father imparted to him the joys and ethical restraints of sport hunting, and his mother, daughter of a landscape architect, nurtured his aesthetic and philosophical awareness. Throughout his school and college years, he made weekly excursions to

the woods — a naturalist and conservationist was being born.

Aldo gradually changed from a boy enjoying the outdoors to a young man concerned about what was happening to the natural scene.

In 1903, at the age of sixteen, he left Burlington to become a forester. Six years later, he graduated from Yale with a master's degree in forestry and joined the infant (four-year-old) Forest Service. An almost fatal illness in 1913-14, and his later experiences in the Kaibab and Gila national forests (the deer population exploded; the range was destroyed by overgrazing; and finally the deer themselves died of starvation and disease) in the southwest, built a personal awareness of man's role as an intrinsic participator in the natural environment.

In 1928, he left the Forest Service to devote full time to the shaping of the new profession of game management. While working in the Gila and Kaibab national forests, he had realized that even wilderness communities such as these could become off-balance due to man's influences; thus, the need to manage wildlife became obvious. He began to view wildlife management increasingly as a technique for restoring and maintaining diversity in the environment rather than primarily as a means of producing a shootable surplus. (Leopold would later state that "wildlife management" most importantly consisted of "people management".)

Soon he became a professor of game management at the University of Michigan where he authored *Game Management*, a work whose literary and philosophic implications have extended its influence beyond the boundaries of the profession. This classic book remains a standard text to this day, and Leopold is regarded by many as the "father" of the profession. Without a doubt, the subsequent emphasis on development of wildlife habitat in federal, state and university projects can in large part be attributed to his far-reaching influence.

In 1935, Leopold was one of the founders of the Wilderness Society, an organization dedicated to safeguarding natural environments and to the promotion of setting aside wilderness areas. He defended the need for wilderness on scientific grounds, "as a naturally functioning system that could be studied for clues to biotic derangement on lands more heavily impacted by man." For this scientific purpose, he contended, the nation's protected wilderness ought to embrace prairie and marshland, coastline and desert, as well as the usual forest and mountains. The significance of this attitude emerged in succeeding years as Leopold refined his concept of a land ethic and the related notion of land health — the capacity of the land to renew itself.

In 1948, Aldo died of an apparent heart attack while fighting a brush fire on a neighbor's farm along the Wisconsin River, cutting short an assignment as an advisor on conservation to the United Nations.

His Philosophy

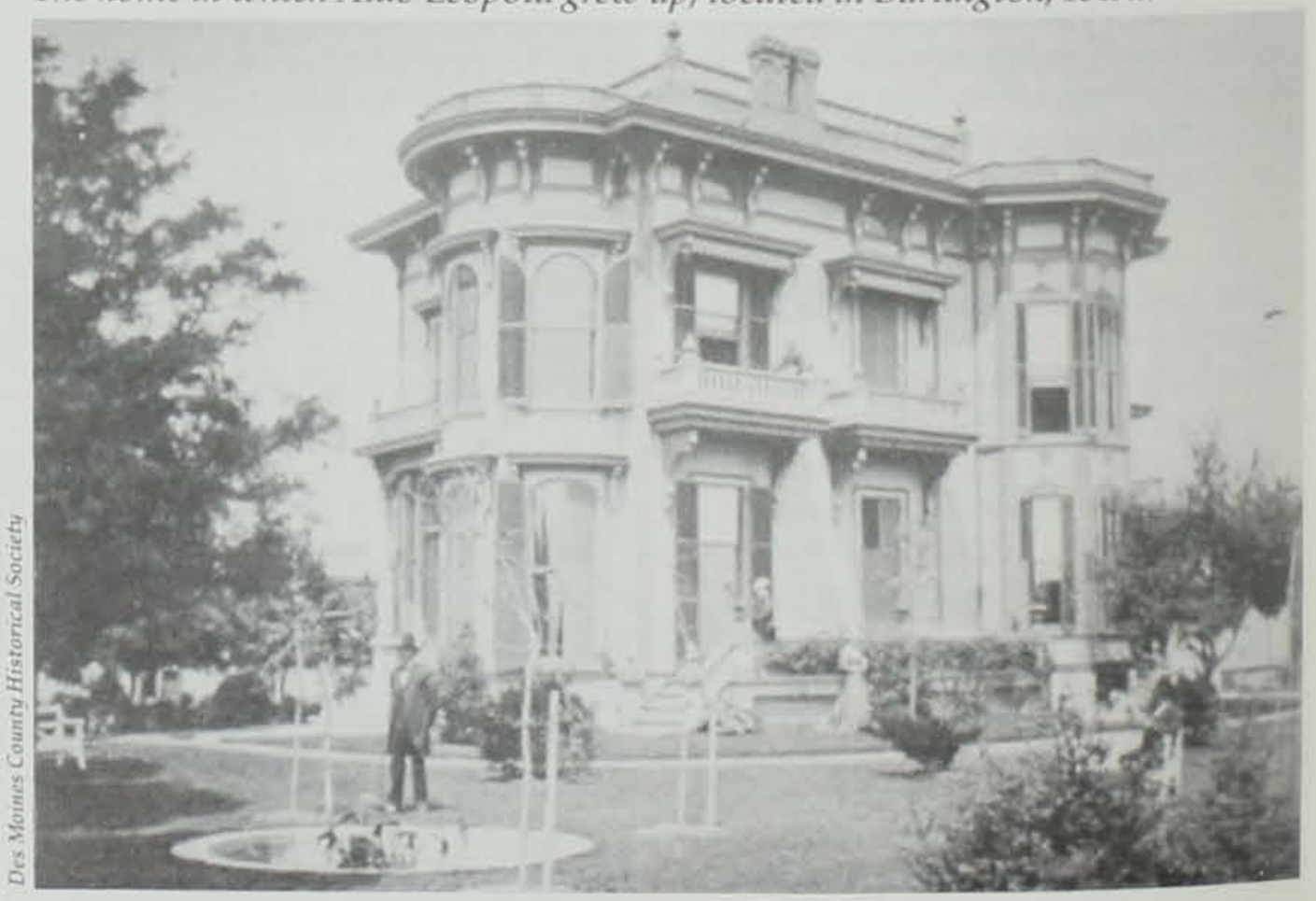
But he was to live in reknown, because in 1949, the Oxford University Press published *A Sand County Almanac*, a collection of essays and ecological axioms based on a life of observation, experience, perception, study and record keeping. The book contains no panaceas, no blueprints for mass action. It is simply one man's expression of his experience with the land, his sense of country, offered to others who would search in their own way, in their own time and place, for the larger meaning and purpose in life. The book is the last statement of Leopold's uncompromising philosophy and remains the clearest and perhaps the most poetic expression of what he stated the ultimate goal of ecology should be — a "land ethic."

A Sand County Almanac's message is as relevant today as it was 37 years ago. It is a kind of bible for many conservationists. Part of its message states: "There are three levels on which ethical systems operate. There are ethics which deal with relationships between individuals: thou shalt not kill, steal, and so forth. There are ethics which relate to the interactions between the individual and society, and which enable communities to function in a rational, healthy manner. And there is a third sphere beyond these two that deals with man's relation to the land and other living things."

Indeed, the land ethic — whose concepts, attitudes and values began to form when he was a child along the Mississippi bluffs with his father — is Leopold's philosophy. His father, Carl, taught Aldo and his other children through sharing and asking "why." Aldo, in turn, encouraged this same curiosity in his own children — Estella, Luna, Nina, and Carl — now distinguished professionals in their own fields. (They each will be giving programs at the celebration.)

Leopold's land ethic is not just a

The home in which Aldo Leopold grew up, located in Burlington, Iowa.



Des Moines County Historical Society

set of rules and regulations. Instead, like his father, Aldo showed those around him what it meant to live with nature by example and through written and oral communication. Aldo was a great communicator and teacher who strongly believed that mankind's moral code should be extended to the total environment if man is to develop a wholesome way of life.

Leopold had an understanding of the complexity of the natural world and believed that we should behave as stewards rather than owners of the land. He stated: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends to do otherwise."

In *A Sand County Almanac* he wrote, "Each year after the mid-winter blizzards, there comes a night of thaw when the tinkle of dripping water is heard in the land. It brings strange stirrings, not only to creatures in bed for the night, but to some who have been asleep for the winter. The hibernating skunk, curled up in his deep den, uncurls himself and ventures forth to prowl the wet world, dragging his belly in the snow. His track marks one of the earliest datable events in that cycle of beginnings and ceasings which we call a year ... All history consists of successive excursions from a single point, to which man returns again and again to organize yet another search for a durable scale of values."

"There is much small-talk and neighborhood gossip among pines. By paying heed to this chatter, I learn what has transpired during the week when I am absent in town. Thus in March, when the deer frequently browse white pines, the height of the browsings tells me how hungry they are. A deer full of corn is too lazy to nip branches more than four feet above the ground; a really hungry deer rises on his hind legs and nips as high as eight feet. Thus, I learn the gastronomic status of the deer without seeing them, and I learn, without visiting his field, whether my neighbor has hauled in his cornshocks."

In an essay entitled "The Land Ethic" he wrote, "A land ethic or ecological conscience reflects a conviction of individual responsibility for the health of the land."

"All ethics rest upon the premise that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to cooperate — perhaps in order that there may be a place to compete for. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively, the land. In short, a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members and also respect for the community as such."

Thus, we can no longer dismiss land as simply the place where corn, gullies and mortgages grow. Because, as Leopold stated, "Land is a fountain of energy flowing through a circuit of soils, plants and animals, and the health is the normal circulation of energy through these various channels of the system, the capacity of the land organism for internal self-renewal."

Come to the Centennial Celebration this fall at Iowa State University and help celebrate the birth of a great Iowan who has shared with us an artful perception into the beauties and necessities of the world in which we live.

Paul Kirpes is an Iowa State University student majoring in animal ecology and political science. He served as an intern with the department this summer.

THE ISU LEOPOLD CENTENNIAL CELEBRATION

Sunday, Oct. 5

3:00 p.m.	Film, "Aldo Leopold: His Life and Thought," followed by comments from Leopold's children. David Lendt, moderator
8:00 p.m.	Raymond F. Dasmann, "The Land Ethic in the World Scene"

Monday, Oct. 6

10:00 a.m.	Estella Leopold, paleobotany seminar
12:00 noon	Luna Leopold, geomorphology seminar
3:10 p.m.	Susan Flader, "Thinking Like A Mountain"
8:00 p.m.	Roderick Nash, "Widening the Circle: Ethical Extension and the New Environmentalism"

Tuesday, Oct. 7

10:00 a.m.	Nina Leopold, prairie restoration seminar
12:00 noon	Carl Leopold, plant physiology seminar
3:10 p.m.	Charles Bradley, "Ecological Research at the Leopold Memorial Reserve"
8:00 p.m.	Huey Johnson, "Making the Land Ethic Work"
9:40 p.m.	Doug Wood, "Earth Songs," performance at the Maintenance Shop

Wednesday, Oct. 8

10:00 a.m.	Two films, both titled *A Sand County Almanac*
12:00 noon	J. Baird Callicott, "The Land Ethic from a Philosopher's Viewpont"
3:10 p.m.	Curt Meine, "The Early Years"
8:00 p.m.	Dale McCullough, "Ecology of the White-Tailed Deer — Fifty Years Later (Errington Lecture)

Thursday, Oct. 9

10:00 a.m.	Curt Meine, seminar on Leopold and agriculture
12:00 noon	Craig Allin, "The Leopold and American Wilderness"
3:10 p.m.	Sharon Kaufman, "Built on Honor to Endure: Evolution of the Leopold Family Philosophy"
8:00 p.m.	The Honorable Bruce Babbitt, "The Land Ethic In One State"

Daytime sessions are in the Pioneer Room of the Memorial Union. Evening Sessions in the Sun Room.

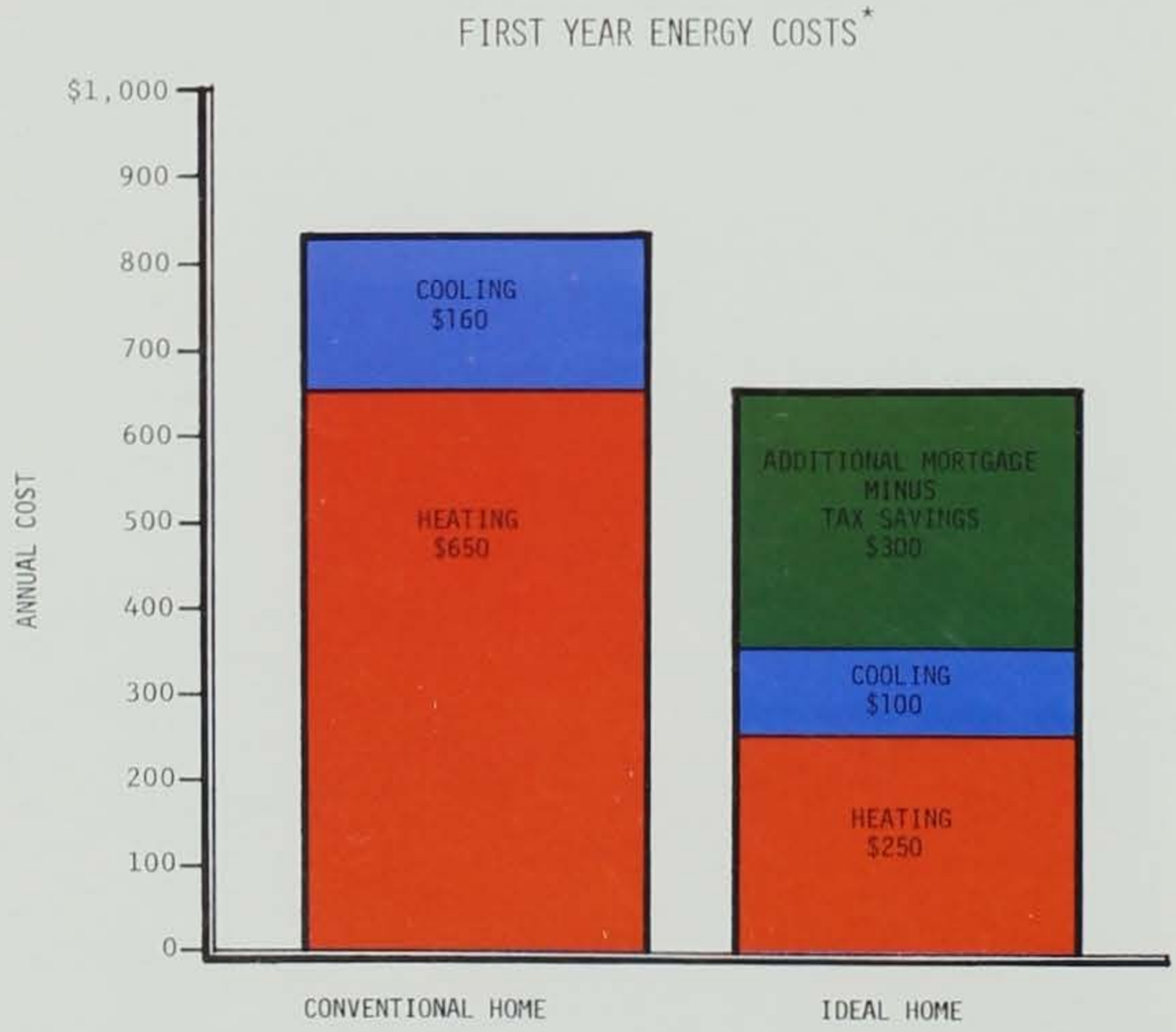
For information about the program, and accommodations in Ames, write or call Dr. Thomas Tanner or Sandra Brooks at 141 Bessey Hall, Iowa State University, Ames, Iowa 50011; 515/924-7252.

Why Build an Energy Efficien

By Randy Martin

Randy Martin

This house combines passive solar with super-insulative construction.



Based on 2,500 square-foot homes using natural gas furnaces. The IDEAL home buyer in the 25% tax bracket is still ahead, after investing $3,000 more at 13% interest, 30-year term.

With the recent slide in oil prices, many of us have forgotten about energy efficiency. This decline will not last forever and when prices rebound we may be in much worse shape than we were before. These drastic declines in oil prices, however, have not been seen in residential natural gas and electric prices. These prices are what should determine the efficiency of our new homes.

Why should we build energy-efficient homes? A 1985 survey by Builder magazine showed energy efficiency to be the number two motivating factor for move-up buyers of larger detached homes. In the lower-than-$100,000 market, energy efficiency ranked first. Buyers want energy efficiency. Building an energy-efficient home requires attention to detail, which results in a quality-built home. Buyers want quality.

Constructing an energy-efficient home benefits everyone involved. First of all, Iowa benefits. Iowa imports 98 percent of its energy. 3.5 billion dollars a year leaves the economy of the state of Iowa for the economies of states such as Texas, Oklahoma, and Wyoming, and other countries such as Saudi Arabia. If Iowans would save just 10 percent, that would inject 350 million dollars into the Iowa economy. The more dollars spent on energy conservation, the more dollars Iowans have left after paying their utility bills to spend in the local economy. Choosing energy efficiency is choosing economic development for Iowa.

Second, the utility company benefits by not having to build a new power plant or install a new pipeline as soon. The building supplier sells more materials. The builder sells a quality home that is worth more. The real estate agent gets a larger commission. The lender lends more money and receives more interest, without increasing the borrower's annual housing costs. The borrower's annual payments for principle, interest, taxes, insurance, and energy (PITIE) can actually decrease with an energy efficient home. The figure shows that the additional investment

Home?

of $3000 in an energy efficient home can often be offset in the first year of ownership by the lower energy costs. And, as energy prices increase, the owners of the energy efficient home will be even farther ahead of their neighbors with conventional homes. Building an energy efficient home is planning for the future.

Energy efficient homes do not have to be exotic designs. They can use standard construction practices and materials, can be adapted to almost any architectural style, and are suitable for any lot. If energy-efficient homes are built properly, most can be heated for $100-300 per year, but economics is not the only reason to build an energy-efficient home. The homeowner gets a home that's comfortable. It has no drafts and the temperatures are even throughout. A tight, well-insulated home is also very quiet. It can have plenty of natural light and better air quality than you can get in a conventional home. It can also have a comfortably high, but controllable, humidity in the winter.

The bottom line is that energy-efficient features give builders a better sale price and homeowners a better quality home. I have just completed a book entitled, "A Builder's Guide to Iowa's IDEAL Homes." The book will include over 95 details on three construction approaches; the Airtight Drywall Approach, the Strapped 2x6 Approach, and the Double 2x4 Approach. It will also cover heating, cooling, controlled ventilation, and water heating systems, along with sections on orientation, layout, insulation, windows & doors, lighting, appliances and landscaping. It should be available in the near future from the Energy Hotline. Call 1-800/532-1114 (in Des Moines 281-7017) to be placed on a list to receive a copy when it becomes available.

Randy Martin is an energy specialist for the department. He holds a B.A. degree from Iowa State University. He also serves as coordinator for the department's energy hotline.

Bridgford Sweeps Again

For the second time Paul Bridgford of Des Moines has won all three Iowa stamp design contests. He first accomplished this incredible feat with the 1983 designs.

Limited-edition, individually numbered prints of Iowa's 1986 waterfowl, habitat and trout stamp designs are on sale and available from the artist. A percentage of the revenue from the prints goes to the Department of Natural Resources' fish and wildlife fund.

The waterfowl stamp design, featuring blue-winged teal, sells unframed for $125, including stamp.

The habitat stamp design, featuring wild turkeys, sells unframed for $113, including stamp.

The trout stamp design featuring a brown trout, sells for $108, including stamp.

A limited number of original remarques are available upon request. For information on ordering prints, contact: Paul Bridgford 1911 Pleasant Street Des Moines, IA 50314 Phone: 515/282-9360

1986 Iowa Trout Stamp

1986 Iowa Habitat Stamp

1986 Iowa Migratory Waterfowl Stamp

BUCKS AT TWENTY FEET

"GO IN AFTER THEM"

By Ron Spengler

Osceola County, in extreme northwest Iowa, is a nearly treeless plain, cross-hatched with endless fields of corn and soybeans. This would frustrate most traditional bow hunters who typically hunt deer from tree stands in timbered areas.

Standing cornfields offer food, cover, and security to white-tailed deer and pose a seemingly impenetrable maze to the hunter. A few innovative northwest Iowa bow hunters have turned the tables on the deer, however, by discovering techniques for hunting standing corn which put deer at a definite disadvantage.

Simply, the technique used by successful cornfield hunters is called the "go-in-after-them" method. Here is how to do it. Begin by locating a field of standing corn being used by deer before the season. Preseason scouting not only allows you to locate deer, it is also a good time to obtain permission to hunt from landowners. After you have selected the field you wish to hunt, start at a down-wind

Barry Day

Barry Day

Northern Iowa bow hunters have learned to stalk deer bedded in cornfields. The technique pays off, as shown below.

corner of the field and quietly still-hunt along the end rows, viewing the length of the field down each row as you go. Windy and/or wet conditions will determine the speed at which you can move. When you reach the end of the field, pinpoint a spot up-row where you lose your ability to distinguish objects clearly. Move up the row to this point and carefully go back across the field cross-row, quietly looking down each row before stepping into it.

Continue this systematic search for the entire length of the field. If you have done your scouting well, you will eventually spot deer, usually bedded down for the day.

Next comes the stalk — a painstakingly slow sneak, using the periodic rattling of cornstalks by the wind to cover any noise you may make. Estimate the distance to the deer, move over three or four rows and try to approach from behind or to the side of the animal to a point where you can get a clear shot through an opening in the corn. During the stalk, count the number of steps you take because your sense of distance will become distorted over time. Deer are surprisingly tolerant of some noise,

Barry Day

and are so secure in their cornfield retreat that bow hunters who do their homework and have the patience to work a field slowly often get a chance to test their shooting skills. During the rut, you may want to try getting into position and attempt to rattle-up the buck with a pair of deer antlers. At any rate, the "go-in-after-them" approach is very effective, as can be seen in the accompanying photos of successful hunters who get a deer every year in the cornfields.

Additional tips from "go-in-after-them" bow hunters Otis Smith and Barry Day are:

1. Wear white camouflage if there is snow on the ground. This will also make your silhouette less distinguishable against a sky background, which deer see while bedded down.
2. If you are hunting for bucks only and run into does, you can avoid spooking them, and also any nearby bucks, by falling back and skirting them, providing you watch the wind carefully.
3. Rainy, snowy or windy days give you the best advantage over the deer.
4. Can't miss at 20 feet? Don't believe it! Begin practicing in early fall by shooting at close-range targets in a nearby cornfield or sweet corn patch. For anatomical reasons, bedded deer present much less of the acceptable kill area than they do when standing.
5. A monocular or small pair of binoculars will help, especially in distinguishing bucks that may be partially hidden by corn leaves.

Ron Spengler is the executive director for the Osceola County Conservation Board. He holds a B.S. degree in wildlife management from the University of Montana. He has been with the Osceola CCB eight years.

NATURE TALE

Vanessa, the Spirited Red Admiral

By Judy Pooler and Dean Roosa

Jim Messina

A deep, wooded valley that was shady, cool and damp ran through a state park in eastern Iowa. This was no ordinary valley but one that was full to the brim with stinging nettle, poison ivy, Virginia creeper and prickly ash. It was so dense, with stinging nettle that grew head-high, and so unfriendly, with big, hungry mosquitoes, that humans seldom ventured there.

As bad as it may have been for people, it was a wonderful place for butterflies. Apparently immune to the nettle's sting, a female red admiral flew among the leaves. The sun danced upon her red, white and black boldly-patterned wings, giving away her presence as she paused often to lay fifty eggs.

Insect eggs are fragile and easily destroyed, and the adults do not care for the eggs or the young, so many eggs must be laid to assure that a few manage to survive to adulthood. In the humid valley where the adult female red admiral carefully laid many eggs on the nettle plants, a thunderstorm arrived. The resulting flash flood flattened the nettle patch, washing away the eggs.

A lone plant, shaded by a large rock, stood the next morning and on one leaf was a single egg of the admiral. The egg, delicate green, barrel-shaped, with fine ribs, lay atop the nettle for five days. On the sixth day, the egg burst open and out wiggled a tiny caterpillar named Vanessa, who immediately began munching on the nettle leaves so necessary for her existence.

Knowing that little fuzzy black caterpillars are easy prey, Vanessa bit deeply into the rib of the nettle leaf which enabled her to pull the edges of the leaf around her. Fastening the edges securely with her silk-like webbing, Vanessa made a home for herself. Safe and snug inside the rolled leaf, she continued to eat. In fact, Vanessa consumed so much that she literally ate herself out of house and home.

Finding her dwelling destroyed, Vanessa crawled to another leaf and made herself a second home. As time passed, she kept eating and making herself new homes all over the nettle patch until finally Vanessa had grown from a tiny fuzzy black speck of a caterpillar to a big, fat, grey caterpillar with horn-like spines. She had become a mature red admiral caterpillar.

Suddenly Vanessa wasn't hungry any more. Instead of eating her leafy home, this time she dug the pinchers at the end of her adbomen into the leaf and hung upside down. Evening had come to the nettle patch. Under the cover of night, Vanessa entered the third stage in a butterfly's life. Her skin hardened, becoming a pupa case or chrysalis. The chrysalis, decorated with metalic spots, hung quietly for about a week within the rolled nettle leaf.

Inside the pupa case Vanessa underwent great changes, the chrysalis acting as a mold. On the 9th day, the hard pupa case split open, revealing a strikingly beautiful Vanessa. Transformed from a caterpillar, the scales of Vanessa's fresh butterfly wings gleamed in the afternoon sun. She clung to the empty pupa case until her wings hardened, then flew to a nearby flower garden to feed upon sweet nectar.

The pale purple coneflowers were the most enticing of all and Vanessa spent many hours in the garden.

Red admirals are known to scientists as **Vanessa atalanta.** *They are close relatives of the mourning cloak and American painted ladies. They have a wing span of about 2½" and are favorites because of their attractive coloration.*

One day, while engrossed in nectaring, the flash of brilliant butterfly wings caught her attention. Suddenly beside her was the most exciting butterfly she had ever seen. The bright red bars on his wings looked like the bars of an admiral's suit — and they matched hers! The time spent in copula passed quickly and then, with a flurry of wings, the amorists parted, flying in opposite directions.

Life was wonderful amid the brilliant hues of the garden and Vanessa eagerly explored the source of every color. One afternoon she flew to investigate an especially gay patch. She landed gently and began probing the colorful swatch with her proboscis.

"Oh, look at the beautiful butterfly!" exclaimed a surprised garden visitor. Unknowingly, Vanessa had landed on the gentleman's tie. She enjoyed the visitors and posed willingly as their cameras clicked.

Summer wore on; Vanessa glided among the foliages. The extra weight of the eggs she carried made her fly more deliberately. Landing on a tall green plant that stretched well above the coreopsis, Vanessa recognized the stinging nettles. These were just the plants for which she had been searching. Quickly she laid her precious eggs in the apex of the leaves and flew off to frolic on the gentle breezes.

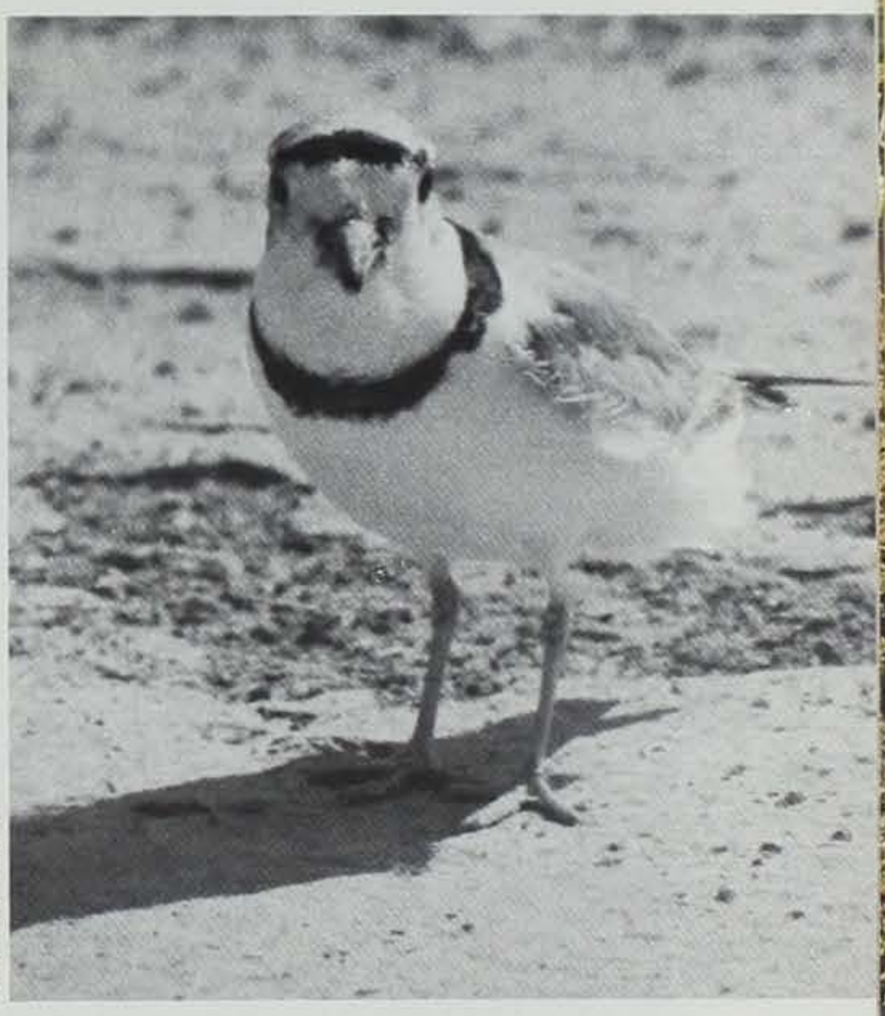
A red admiral's wing floated to the ground and tumbled about in the breeze. Close by on the path, a dragonfly devoured his prey. Vanessa's life had come to an end. That is nature's way. Over in the nettle patch seventy eggs awaited the moment of hatching. That too is nature's way. Perhaps a red admiral as lovely and spirited as Vanessa would hatch to again grace the garden scene.

Profile of an Endangered Species

Piping Polver

(Charadrius melodus)

By Dean M. Roosa



Randall D. Williams

Shorebirds are conspicuous members of our avifauna. As their name implies, their preferred habitat is the shores of wetlands. A notable exception is the killdeer, which has adapted to dry habitat — even nesting in cornfields. Shorebirds range in abundance in Iowa from the very common killdeer, found in every county, to the piping plover *(Charadrius melodus),* so rare that most birders have not seen one.

The piping plover is a light-colored shorebird, slightly smaller than the killdeer. Besides its size and color the piping plover differs from the killdeer in having only one, incomplete dark band across the upper breast.

Piping plovers occur as three populations: (1) the Atlantic Coast (2) the Great Lakes, and (3) the northern Great Plains from Alberta to Manitoba, extending south to Nebraska and Iowa. Numbers have been greatly reduced in all three populations, especially in the Great Lakes and coastal regions.

All Iowa nesting records have come from the Missouri River and vicinity. With the last nesting at DeSoto National Wildlife Refuge in 1973, the piping plover was believed to have become extirpated as a nesting species. But, in 1983 biologists discovered two nests in an unlikely place — the ash disposal ponds of a power generating station near the Missouri River. The power company is cooperating to avoid unnecessary disturbance of the birds, and so far their efforts appear to be successful. Even more birds were observed during 1984 through 1986.

Several reasons have been cited for the dramatic decline in piping plover numbers. Like certain other shorebirds, they were hunted nearly to extinction until legislation gave them protection in 1913. Populations in the Great Lakes and Atlantic Coast have not recovered to their former levels. During recent times disturbance by humans, habitat alterations, pollution, and changes in water levels have reduced piping plover numbers. In Iowa, channelization of the Missouri River has permitted willows and cottonwood plants to invade breeding habitats that previously were kept open by periodic flooding. The piping plover probably no longer nests in native habitats in Iowa.

Piping plovers nest on sandy beaches or open flats near water. Individuals tend to be very specific about the location of their nests, and are extremely sensitive to disturbance by humans.

The piping plover has, since 1977, been officially listed as endangered in Iowa, and has recently been added to the federal endangered species list compiled by the Fish and Wildlife Service. Without specific steps to insure its protection, the piping plover is a species that could become extinct during our lifetimes.

Jeff Meyers/Iowa City Press-Citizen

UNIVERSITY OF IOWA RAPTOR PROJECT

By Warren Slebos and Wayne Fett

In February of 1985, the University of Iowa opened a raptor rehabilitation center at the Macbride Nature Recreation Area. The initial purpose was primarily to rehabilitate birds of prey and educate the public about the role of raptors in the environment. Since its beginning a little over a year ago, the program has flourished with a strong education program being developed as well as the rehabilitation work continuing.

Raptor Education

Once a rehabilitation center was established at Macbride Nature Recreation Area, it was a simple step to add a raptor education segment to the environmental education programs that were already being conducted for school groups. The raptor programs were met with an enthusiastic response. The children showed a keen interest in the birds and the rehabilitation process. We quickly determined that this program should be expanded. The raptor education program is now a multi-faceted program using as educational tools birds that are permanent residents of the rehabilitation center due to injury. The education program involves: the raptor education segment of the environmental education program, reaching more than 1,000 elementary school children a year; community programs offered periodically to cover research and other projects; shopping mall presentations to familiarize the public with the Macbride rehabilitation program; evening campground programs at nearby Macbride State Park and Coralville Reservoir; and school outreach program where "teaching" birds are brought to the schools and a talk and slide show is given in the classroom.

The Rehabilitation Program

The raptor rehabilitation program under the auspices of the division of recreational services of the University of Iowa obtained its initial funding from the university. Indoor cages were built and five outdoor flight pens were constructed. Medical supplies were purchased. The need for a facility of this type in eastern Iowa is greater than anyone had expected. Over forty injured hawks and owls have been treated in the first year of operation. Some have been successfully returned to the wild. Others are in various stages of recuperation. Birds treated have included great-horned owls, barred owls, saw-whet owls, screech owls, osprey, red-tailed hawks, broad-winged hawks and kestrels. They find their way to the center through the cooperation of conservation officers, nature centers and concerned individuals.

The rehabilitation program is a big undertaking, and it has been made possible only though the generosity of many caring individuals. Veterinarians Paul Cooper and Daniel Downing from the University of Iowa Animal Care Unit and Dr. Greg Zimmerman of the All Pets Clinic in Iowa City have lent their assistance in diagnosis and treatment of injured birds. Environmental educator Burke Thayer provides direction to more than a dozen volunteers as they provide the daily care so essential to recovery.

New Growth

This fledgling program is growing by leaps and bounds. Injured birds lose a great deal of endurance and strength during the recovery period. Flight training and conditioning is essential before they can be released. Construction of a large flight cage is scheduled for the summer of 1986. The flight cage will aid in the conditioning process. The Macbride Nature Recreation Area is located fifteen miles north of Iowa City. Since most of the volunteers reside in Iowa City, a satellite center there for treatment of those birds that need daily attention may be established.

The raptor rehabilitation program will begin using a newsletter to inform individuals of new and exciting developments. Individuals interested in receiving this may write the Division of Recreational Services, University of Iowa, Room E216 Field House, Iowa City, IA 52242.

Warren Slebos is the associate director of recreational services at the Univeristy of Iowa. Wayne Felt is a graduate assistant working toward an M.A. degree in recreation education.

DEPARTMENT OF NATURAL RESOURCES

1986-1987 APPLICATION FOR SEEDLINGS

Reforestation provides continual forest products.

Habitat improvement means more wildlife.

Erosion control improves water quality.

Proper planting improves survival.

The State Forest Nursery is adding a new service. Beginning in the fall of 1986 we will offer seedlings for both the fall and spring planting. Many years of experience of fall planting on state forests and on private land makes us confident in offering plants for fall planting, particularly for areas protected from direct wind. If you are questioning the best time to plant, contact the district forester or wildlife biologist.

PLEASE TAKE A FEW MOMENTS TO REVIEW THE INSTRUCTIONS

1) Indicate on your application either FALL or SPRING delivery. As orders are received, stock will be reserved from our inventory. *If you want to plant in the fall and spring, separate orders will have to be made.*

2) We will *stop taking orders for fall delivery by September 15th.* Shipment of stock will be after September 15th, weather permitting.

3) Payment for *Fall* delivery will be expected within 15 days of the billing notice.

4) Payment for orders received before December 1st for *Spring* delivery will not be due until December 15th. If we have ot received payment within fifteen days after December 15th, your order will be cancelled.

5) A minimum order is 500. Wildlife or Songbird Packets may be purchased by themselves.

6) Spring orders are usually sent out during the month of April. You can get information about our shipping schedule in the spring by calling 515/233-4110 for a recorded message.

If you have any questions, you can write the Nursery at 2404 South Duff Avenue, Ames, Iowa 50010, or call 515/233-1161, from 8:00 to 4:30, Monday through Friday.

Whether you choose to plant in fall or spring, we appreciate your willingness to establish trees or shrubs for the many benefits they provide. Have a good planting season!

1986
The year of
the Tree

Sincerely yours,

Gene Hertel

Gene Hertel
State Forester

Weed control improves growth.

Grazing within plantations results in failures.

Conservation is our business...and yours.

SUGGESTED SPACING

Species	Reforestation	Wildlife	Erosion Control
Pines and other conifers	8' x 6' (908 plants/acre) — for timber 5' x 5' (1,742 plants/acre)— for Xmas Trees	same (High density makes good cover)	same
Walnut and other hardwoods	8' x 8' (681/acre) to 12' x 12' (302/acre)	8' x 8' (681/acre) to 16' x 16' (170/acre)	8' x 8' to 12' x 12'
Russian Olive		6' x 6' (1,210/acre) to 12' x 12'	same
Autumn Olive and other shrubs		3' to 5' between plants within rows; 5' to 10' between rows; range from 2,900 plants/acre (3' x 5') to 871/ (5' x 10'). Or plant in clumps 4 x 4 or 6 x 6.	

GENERAL INFORMATION

Species	Mature Size Range	Moisture			Light		Remarks	#Ordered (For Your Records)
		Dry	Well Drained	Moist	Full Sun	Some Shade		
White Pine	50-80'		X	X	X	X	Intolerant of air pollutants. Good timber tree. Adaptable to most sites. Native to NE Iowa.	
Scotch Pine	30-60'	X	X		X		Hardy. Adaptable.	
Red Pine	50-80'		X		X		Requires cool sites. Good timber tree.	
Ponderosa Pine	60-100'	X	X		X		Recommended for Western Iowa only.	
Jack Pine	35-50'	X	X		X		Hardy and adaptable. Good cover for coal spoil banks.	
Red Cedar	40-50'	X	X	X	X		Tolerates poor, gravelly soils; prefers airy site. Very drought resistant. Good wildlife food and habitat. Native.	
Black Walnut	50-70'		X		X		Valuable wood products tree. Good firewood. Requires deep, rich, well-drained soil. Native.	
Green Ash	50-60'		X	X	X		Valuable wood products tree. Very good firewood. Native.	
White Ash	50-80'		X		X		Valuable wood products tree. Very good firewood. Native to all but NW Iowa.	
Shagbark Hickory	60-80'		X		X		Wood products. Excellent firewood. Native to all but NW corner of state.	
Silver Maple	60-80'		X	X	X	X	Bottomland sites. Valuable wood products trees. Good firewood. Native.	
Red Oak	60-80'		X	X	X		Valuable wood products tree. Excellent firewood. Native to all but NW corner of state.	
White Oak	50-80'		X	X	X		Valuable wood products tree. Excellent firewood. Native to all but NW corner of state.	
Bur Oak	70-80'	X	X	X	X		Adaptable to various soils. Excellent firewood. Staves and railroad ties. Native.	
Mixed Oak							May contain red oak, white oak and bur oak in varying proportions.	
Russian Olive	12-25'	X	X		X	X	Very hardy plant. Good food for wildlife. Drought resistant.	
Autumn Olive (Cardinal strain)	12-18'		X		X	X	Good wildlife food and habitat. Plant on protected site.	
Tatarian Honeysuckle	10-12'	X	X		X	X	Very hardy. Dense growth. Good wildlife habitat and food for birds. Fruit available July-August.	
Amur Honeysuckle	12-15'	X	X		X	X	Occasional winter killing of branches in northern Iowa. Fruit available in September-November. Good wildlife habitat and food for birds.	
Redosier Dogwood	7-9'		X	X	X	X	Producers cluster of stems from ground. Good wildlife food and habitat. Native to NE Iowa.	
Gray Dogwood	10-15'	X	X	X	X	X	Hardy. Forms large colony of plants from original. Good cover. Native.	
Osage Orange	20-40'	X	X		X		More adaptable to southern Iowa. Withstands poor soil extremely well. Thorny, useful for wildlife habitat.	
Common Lilac	8-15'		X		X		Hardy. Shrub border or in groupings. Good wildlife habitat.	
Common Chokecherry	20-30'	X	X	X	X	X	Hardy. Good food for wildlife native.	
Hybrid Poplar	40-60'	X	X	X	X		Mixed hybrids of cottonwood selected for Iowa. Good for fuelwood plantations.	
Wild Plum	12-15'	X	X	X	X	X	Hardy. Forms thicket. Good wildlife habitat.	
Siberian Crab	20-50'		X		X		Large widespreading crabapple with small fruit. White flowers. Excellent wildlife species.	
Wildlife packet							200 plants valuable to wildlife. 50 conifers, 50 hardwoods, 100 shrubs chosen by the nursery.	
Songbird Packet							Mixed variety of 20 shrubs beneficial to songbirds.	

1. Fill in the "number wanted" column.

PLANTS AVAILABLE

Wildlife and songbird packets can be ordered separately.

	Cost/ Packet	Code	Number of Packets Wanted	Office Use Only
Wildlife Packet	$19.00	96		
Songbird Packet	10.00	95		

Species	Height	Cost/ Hundred (taxes, shipping, and handling are included)	Code	Number of plants in units of 100	Office Use Only
(Do not order less than 500 plants, and order in units of 100)					
White Pine	5-12"	$8.60	30		
Scotch Pine	5-12"	8.60	20		
Red Pine	6-14"	8.60	17		
Ponderosa Pine	5-12"	8.60	15		
Jack Pine	6-14"	8.60	10		
Red Cedar	6-12"	8.60	16		
Black Walnut	10-18"	8.60	24		
Green Ash	8-18"	8.00	08		
White Ash	8-18"	8.00	28		
Shagbark Hickory	4-12"	8.00	52		
Silver Maple	8-18"	8.00	21		
Red Oak	8-18"	8.00	41		
White Oak	6-12"	8.00	29		
Bur Oak	8-18"	8.00	04		
Mixed Oak	8-18"	8.00	51		
Russian Olive	8-16"	8.00	19		
Autumn Olive	8-16"	8.00	03		
Tatarian Honeysuckle	8-16"	8.00	23		
Amur Honeysuckle	8-16"	8.00	01		
Redosier Dogwood	8-18"	8.00	18		
Gray Dogwood	6-12"	8.00	07		
Osage Orange	8-16"	8.00	14		
Common Lilac	6-12"	8.00	47		
Choke Cherry	8-16"	8.00	39		
Hybrid Poplar (rooted cutting)	8"	8.00	53		
Wild Plum	10-18"	8.00	31		
Siberian Crab	6-12"	8.00	55		

1986-87 APPLICATION FORM

PLEASE CHECK ONE BOX:

- ☐ **FALL PLANTING 1986**
- ☐ **SPRING PLANTING 1987**

2. ADDRESS

(Please Print)

(LANDOWNER NAME — **PLEASE PRINT**)

(MAIL ADDRESS)

(CITY) (STATE) (ZIP)

(PHONE NUMBER)

3. Check pickup or ship box.

- ☐ **I will pick up my order at the nursery when notified.**
- ☐ **I want my order shipped to the address above.**

SHIPPING ADDRESS

(If different from above)

(NAME — **PLEASE PRINT**)

(MAIL ADDRESS)

(CITY) (STATE) (ZIP)

(PHONE NUMBER)

4. Please Answer Each Question

1. These trees are to be planted in _____ County.
2. Are you a tax-exempt government? Yes ☐ No ☐
3. Have you purchased plants from the Nursery before? Yes ☐ No ☐
4. I RECEIVED ASSISTANCE IN PLANNING THIS ORDER FROM: 1. ☐ No one, 2. ☐ Soil Conservation Service, 3. ☐ ASCS, 4. ☐ County Extension Service, 5. ☐ District Forester, 6. ☐ Conservation Officer, 7. ☐ Wildlife Biologist, 8. ☐ County Conservation Board, 9. ☐ State Nursery
5. MAIN PURPOSE OF PLANTING: 1. ☐ general forestry, 2. ☐ wildlife habitat, 3. ☐ erosion control, 4. ☐ Christmas trees, 5. ☐ other.
6. THE PLANTING LOCATION IS: 1. ☐ farm, 2. ☐ city, 3. ☐ acreage, 4. ☐ government land, 5. ☐ other.

5. Sign the agreement. Fill in your mailing address.

I agree to plant and use the nursery stock requested upon the described property for establishing or improving existing forests, erosion control, game or water conservation, with these restrictions: I agree NOT to resell or give these plants away with roots attached to any person, firm, corporation or agency nor to plant any of them for new windbreak, shade, or ornamental purposes. I agree to protect all plantings from fire and domestic livestock grazing. I agree to forfeit for destruction any trees planted or used in violation of the above restrictions.

_____

Landowner Signature

FORESTRY DIVISION
DEPARTMENT OF NATURAL RESOURCES

The Forestry Division of the Department of Natural Resources assists the people of Iowa to enhance the woodland resources by following this broad objective: To foster environmental protection and strive to insure, for present and future generations, the greatest economic and social benefits from trees, forest land, and related resources. The Forestry Division works toward these objectives through forest management, tree planting, forest protection, timber processing improvement and demonstration of woodland values. These services are available to all landowners, public and private.

For planting information and other assistance concerning the management, harvesting, marketing and utilization of your woodlands, contact the District Forester serving the county in which your land is located (see map on back of application). This is a free service, and we urge you to contact them before you plan any special or extensive plantings.

Similar management advice for wildlife is available from Wildlife Management Biologists (also listed on the back of the application). Planting assistance may also be available from your County Conservation Board. A list of pamphlets about various aspects of forestry are available from Forestry Extension, Iowa State University, Ames, Iowa 50011. Write them for a copy.

DISTRICT FORESTER ADDRESSES

1. ELKADER	Box 662, 52043,	(319) 245-1891
2. CHARLES CITY	Box 4, 50616,	(515) 228-6611
3. MARSHALLTOWN	Box 681, 50158,	(515) 752-3352
4. ANAMOSA	Box 46, 52205,	(319) 462-2768
5. WAPELLO	Box 62, 52653,	(319) 523-8319
6. FAIRFIELD	Box 568, 52556,	(515) 472-2370
7. CHARITON	Stephens State Forest, RR 3, 50049	(515) 774-4918
8. ADEL	110 So. 8th, 50003,	(515) 993-4133
9. RED OAK	Box 152, 51566,	(712) 623-4252
10. LE MARS	Box 65, 51031,	(712) 546-5161
11. CRESTON	Box 2, 50801,	(515) 782-6761
12. HUMBOLDT	102-8th St., S., 50548,	(515) 332-2761
State Forest Nursery		(515) 233-1161

WILDLIFE MANAGEMENT BIOLOGIST ADDRESSES

1. Bays Branch Wildlife Unit ..... (515) 993-3911
   801 Court, Courthouse, Adel, 50003
2. Big Marsh Wildlife Unit ..... (515) 456-3730
   SCS Office Bldg., 115 - 2nd Ave. N.W., Hampton, 50441
3. Big Sioux Wildlife Unit ..... (712) 472-3751
   301½ - 1st Ave., Rock Rapids, 51246
4. Black Hawk Wildlife Unit ..... (712) 657-2639
   Box 815, Lake View, 51450
5. Coralville Wildlife Unit ..... (319) 354-8343
   ASCS Office Bldg., 517 Southgate Ave., Iowa City, 52240
6. Ingham Wildlife Unit ..... (712) 362-7222
   SCS Office Bldg., 2109 Murray Rd., Estherville, 51334
7. Maquoketa Wildlife Unit ..... (319) 652-2456
   Pershing Rd. E., Maquoketa, 52060
8. Missouri River Wildlife Unit ..... (712) 423-2426
   912 - 7th St., Onawa, 51040
9. Mt. Ayr Wildlife Unit ..... (515) 464-2220
   SCS Office Bldg., RR 3, Mt. Ayr, 50854
10. Odessa Wildlife Unit ..... (319) 523-8319
    ASCS Office Bldg., 220 N. 2nd St., Wapello, 52653
11. Otter Creek Wildlife Unit ..... (515) 484-3752
    USDA Office Bldg., 203 W. High St., Toledo, 52342
12. Rathbun Wildlife Unit ..... (515) 774-4918
    RR 2, Box 310, Chariton, 50049
13. Red Rock Wildlife Unit ..... (515) 961-0716
    Box 423, Indianola, 50125
14. Rice Lake Wildlife Unit ..... (515) 324-1819
    SCS Office Bldg., RR 2, Box 241A, Northwood, 50459
15. Riverton Wildlife Unit ..... (712) 374-3133
    SCS Office Bldg., Box 490, Sidney, 51652

16. Ruthven Wildlife Unit ..... (712) 262-9326
    SCS Office Bldg., 306 - 11th St., S.W. Plaza, Spencer, 51301
17. Saylorville Wildlife Unit ..... (515) 432-4320
    ASCS Office Bldg., 718 8th St., Boone, 50036
18. Sweet Marsh Wildlife Unit ..... (319) 422-5832
    SCS Office Bldg., RR 1, Box 103, West Union, 52142
19. Upper Iowa Wildlife Unit ..... (319) 382-4895
    ASCS Office Bldg., 911 S. Mill St., Decorah, 52101
20. Wapello Wildlife Unit ..... (515) 682-3552
    ASCS Office Bldg., 1309 E. Mary, Ottumwa, 52501

Fold Here

From: _____

_____

_____

Nursery Forester
State Forest Nursery
2404 South Duff Avenue
Ames, Iowa 50010-8093

PLEASE CHECK ONE BOX:

☐ **FALL PLANTING 1986** ☐ **SPRING PLANTING 1987**

Conservation Update

Early this summer, Mr. George King, proprietor of King Transfer and mayor of Onawa, Iowa came up with a rather novel idea to bring attention to his community. King invested approximately $750 to have one of his trucks painted as above. The truck was finished in time for the Onawa Lewis and Clark Festival and set out on the I-29 overpass to advertise. The truck is one of about a dozen owned by King Transfer and it is used to haul freight throughout western Iowa and eastern Nebraska.

IOWA DNR PLACES HIGH IN NATIONAL COMPETITION

The information-education bureau of the DNR has won two awards for public information products it produced in 1985, from the Association for Conservation Information.

At its recent, annual meeting, ACI awarded second place in the television public service announcement category for the bureau's production of a Chickadee Check-off 30-second spot produced by Robert Runge and video taped by Ken Formanek, both of the information-education bureau. Runge also captured third place for radio programming with his weekly, five-minute show "Conservation Capsule" syndicated to 48 Iowa radio stations.

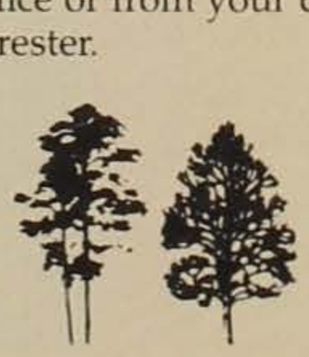
Ross Harrison, chief of the information-education bureau, was elected president of ACI, an international organization with members from nearly all states, which has the purpose of promoting professional public communications on natural resource issues. It has been 40 years since an Iowan has been president of the 50-year-old organization.

Forestry Field Day Schedule

A total of 11 Forestry Field Days are scheduled during September and October. The date, host county, and specific location (where available) are shown in the table below.

September 17
Washington County
(Lake Darling)
September 18
Dubuque County
(Bankston Park)
September 19
Clayton County
(Conservation Center)
September 23
Decatur County
September 30
Allamakee County
(Yellow River Forest)
October 1
Winnebago County
(Rice Lake Refuge)
October 2
Jackson County
(Eden Valley)
October 7
Black Hawk County
(Hickory Hills)
October 14
Van Buren County
(Lacey Keosauqua)
October 21
Adams County
(Lake Icaria)
October 22
Pottawattamie
County

Topics covered will vary from one field day to another. Some will be all-day sessions, while others will be conducted during the afternoon. More specific information on time, topics, and meeting details can be obtained from the host county extension office or from your district forester.



Memorial Demonstration Planting

A wildlife demonstration planting has been established in Appanoose County in memory of Buell Taylor, a devoted hunter and wildlife conservationist.

The memorial was decided upon by Mrs. Taylor (above) and their daughter as a way to continue Mr. Taylor's life-long dedication to wildlife.

The planting demonstration plots were designed with the help of the forestry division personnel of the Department of Natural Resources

The planting demonstration plots consist of 29 species of trees and shrubs and are open to the public. Anyone interested in planting wildlife cover, but are not sure what species would be appealing on their property, it is a good place to stop in and see the different growth forms and species present.

The wildlife demonstration planting is a lasting tribute to a man who has contributed a life of service to wildlife.

CALENDAR
October, 1986

October 1-31	Photographers' Exhibit	Jackson County Historical Society Museum Maquoketa 319/652-3783
October 3-5	Iowa Conservation Education Council Fall Workshop "The Year of the Tree"	Conservation Education Center Springbrook State Park Guthrie County 515/747-8383
October 4	4th Annual Clarence Pickard Memorial Bike Ride 8:00 a.m.	Pickard Park -Warren County 515/961-6169
October 4	Prairie Seed Collection	Prairie Smoke Wildlife Area Wright County 515/532-3185
October 4	Trapper's Clinic	Izaak Walton League Maquoketa Jackson County 319/652-3783
October 4	Loess Hills Bus Trip	Palo Alto County 712/837-4866
October 4	Birdwatching Trip 7:30 a.m.	Courthouse Cass County 712/243-3542
October 4 (Oct. 5- rain date)	Gun Dog Seminar 8 a.m.-4 p.m. Sponsored by Pheasants Forever Featured guest— Dave Duffy	Cardinal Springs Lodge Limited Maquoketa 319/462-4476 319/488-2561
October 4	Prairie Prowling 2 p.m.	Hagge Park Sac City Sac County 712/662-4530
October 4	Pelican Watch 11 a.m.-5 p.m.	Red Rock Reservoir 515/432-2823
October 4-5	Artist in the Park Mural Designer	Hartman Reserve Nature Center Black Hawk County 319/277-2187
October 4-5	Forest Craft Festival	Lacey-Keosauqua State Park Van Buren County 515/251-5971
October 4-5	Scarecrow Contest	Bentonsport Park Van Buren County 319/293-3589
October 4-5	Forest Craft Festival	Lacey-Keosauqua State Park Van Buren County 515/281-8657
October 4-5	Mural Artist 1:00-4:00 p.m.	Hartman Reserve Nature Center Black Hawk County 319/277-2187
October 4, 11, 18 and 25	Observing Space Through Telescopes (one hour after sunset)	Ashton-Wildwood Park Observatory Jasper County 515/792-9780
October 5	Puffball Rally Mushroom Hunt 1:30-4:30 p.m.	Dickson Timber Forest Preserve Carroll County 712/792-4614
October 5	Ecology Hike 2:00 p.m.	Swiss Valley Nature Center Dubuque County 319/556-6745
October 5	Pelican Watch 11 a.m.-5 p.m.	Saylorville Reservoir 515/432-2823
October 5, 12, 19 and 26	Apple Cidering	Hartman Reserve Nature Center Black Hawk County 319/277-2187
October 5, 19, 26	Apple Cidering and Music 1:00-5:00 p.m.	Hartman Reserve Nature Center 319/277-2187
October 5-9	Aldo Leopold Centennial Celebration	Iowa State University 515/294-7252
October 7	Timber Management Day 9:30 a.m.-3:30 p.m.	Hickory Hills Park Black Hawk County 319/266-6813
October 7	Night Hike 7 p.m.	Grant Park Auburn Sac County 712/662-4530
October 9	An Evening with folksinger Tom Pease 7:30 p.m.	Indianola Public Library Warren County 515/961-6169
October 9-12 and 19-24	Food Pantry Month Donate $2 in food for 1 night of camping	Polk County Park 515/999-2559
October 10	Star Party 7:00 p.m.	McFarland Park Story County 515/232-2516
October 10-11	Fall Environmental Education Workshop	Ingham Lake Lutheran Bible Camp Palo Alto County 712/837-4866 515/295-2138
October 10-11	Fall Environmental Workshop	Camp Wyoming Clinton County 319/847-7202
October 10-12	Hawk Ridge Weekend Hawk Watching at Duluth, Minnesota	Plymouth County 712/947-4270
October 11	Maquoketa River Canoe Float	Izaak Walton League Maquoketa Jackson County 319/652-3783
October 11	Des Moines River Canoe Trip	Wapello County 515/682-3091
October 11	Campfire Storytelling 7:30 p.m.	Hillview Recreation Area Plymouth County 712/947-4270
October 11	Volksmarch 2:00-5:00 p.m.	Cedar Valley Nature Trail Black Hawk County 319/277-2187
October 11-12	Heritage Days Pioneer Skills and Crafts Photo Contest	Osborne Center Clayton County 319/245-1516
October 12	Volksmarch 12:00-4:00 p.m.	Greenbelt Trail Story County 515/232-2516
October 12	Drive the Trail Cedar Valley Nature Trail 12:00-4:00 p.m.	LaPorte City to McFarlane Park Black Hawk County 319/277-2187
October 12	Volksmarch and Apple Cidering 1:00-4:00 p.m.	Hartman Reserve Nature Center Black Hawk County 319/277-2187
October 12 and 19	Forest Color Hike 2:00 p.m.	Swiss Valley Nature Center Dubuque County 319/556-6745
October 13	Mashmallow and Hot Dog Roast 6 p.m.	Hagge Park Sac City Sac County 712/662-4530
October 15	Food Pantry Golf Day Donate $2 in food for 1 round of golf	Jester Park Golf Course Polk County 515/999-2559

Classroom Corner

By Robert P. Rye

This year has been called, "The Year of the Tree." The Iowa Conservation Education Council's (ICEC) Fall Workshop has the same theme. The workshop is open to all educators and will be held at the Conservation Ed Center, Oct. 3, 4 and 5, 1986. Subjects will include: forestry in Iowa, trees for schools, and the National Arbor Day Foundation. For more information contact the Conservation Education Center, R.R. #1, Box 53, Guthrie Center, IA 50115.

Below is a little tree trivia in the form of true/false questions. Try your luck at answering them.

1. About 30 to 40 gallons of sugar maple sap must be boiled down to make one gallon of maple syrup. True False
2. A well positioned shade tree can keep a house 10 percent cooler in the summer. True False
3. The slippery elm was "responsible" for the spitball — a tricky pitch thrown by baseball pitchers in the days of Babe Ruth. Pitchers would chew slippery elm seeds, then rub the liquid onto the baseball. True False
4. Every year in the United States, each person uses enough tree products to make a tree about 100 feet tall and 24 inches in diameter. True False
5. A large leafy tree may take up as much as 1,000 pounds of water from the soil every day. True False
6. Enough firewood is used each year in the United States to build a 100-foot wall of wood that would stretch from New York City to San Francisco. True False
7. An acre of trees can remove about 13 tons of dust and gases every year from the surrounding environment. True False
8. The tallest redwood ever measured was 305 feet tall. True False
9. Nearly half of the world's population depends on wood as its major source of fuel for heating and cooking. In fact, two-thirds of all wood cut in the world is used for fuel. True False
10. Byproducts of trees may one day take over the job now performed by oil, gas and coal. True False

Answers

1. True 2. False (20 percent) 3. True 4. False (16 inches in diameter) 5. False (one ton) 6. True 7. True 8. False (367 feet — 62 feet taller than the Statue of Liberty) 9. True 10. True

Leaders in Conservation

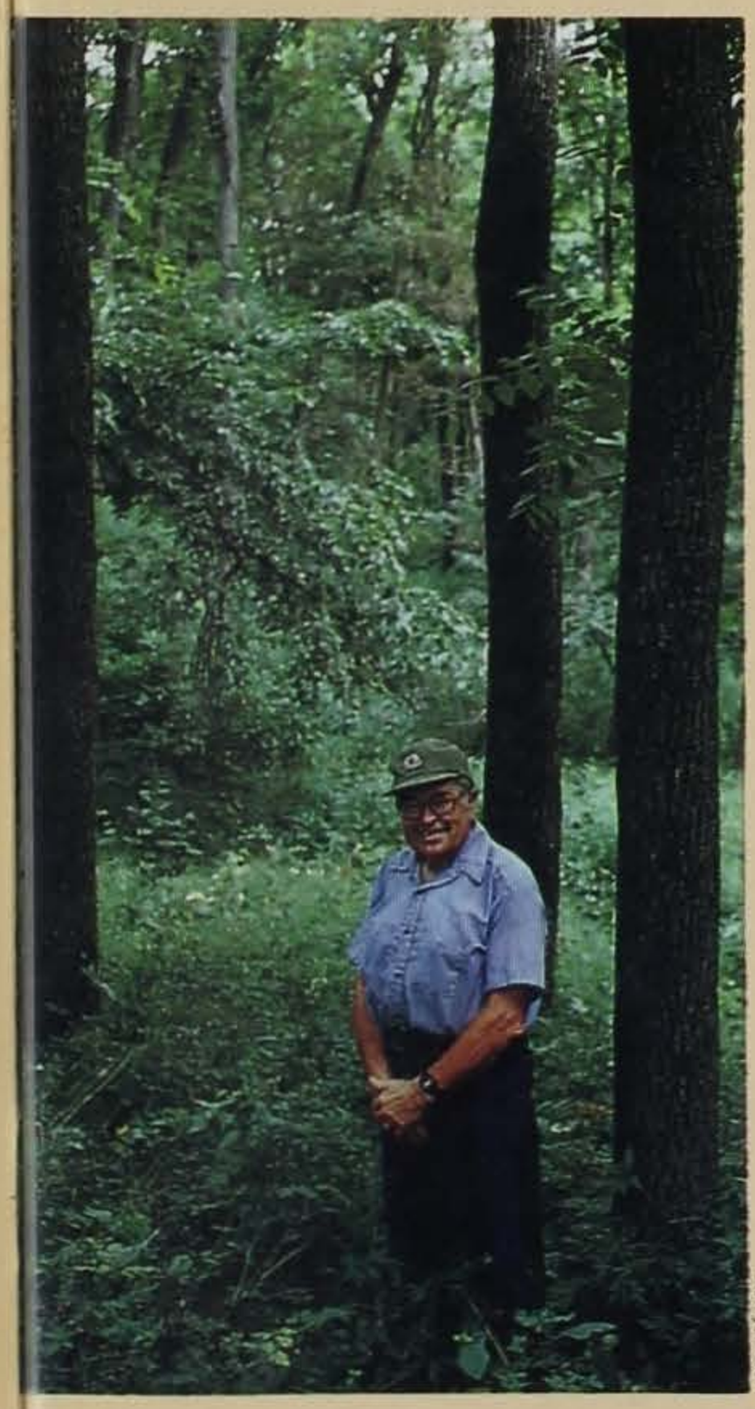
WALTER HAGEN

By Roger Sparks

Walter Hagen is not a man who takes "no" easily.

His father knew that some 50 years ago when young Walter suggested they develop a new soil and water conservation technique on their hilly Allamakee County farm. Terracing, Walter argued, would hold more water on the land and reduce erosion. Walter's father believed the completed terraces, the first in Allamakee County, had ruined the farm. It was a drought year in 1936, and many farmers witnessed almost total crop failure. The Hagens grew a fine crop, and from then on, the property has been a model farm.

Walter Hagen, now 72, and son Russel have employed soil conservation practices for years including the use of terracing, ponds, windbreaks, conservation tillage, native grasses and various types of crop retirement.



Ron Johnson

"We use chemicals and fertilizers, but on the light side," Hagen said. "Then we use conservation practices to keep those chemicals on the soil." The practices, he said, are "cost effective as well as environmentally protective."

A Hagen fencerow is a woody fencerow, and a useful one at that. Tall trees along fields can shade crops and consume ground water. Therefore, as soon as the trees in the fencerows get about ten inches in diameter, Walter cuts them for use in his wood-burning furnace. Thus, the fencerow provides perpetual wildlife habitat, protection from wind and water erosion, and big energy savings.

Walter likes to see trees on roadsides. He was instrumental in getting trees planted along roads in Allamakee County, gathering donations from local citizens to do so. He carried the idea farther — his valuable knowledge of soil conservation was refined into a slide show to be viewed by legislators and others in Des Moines. He promoted the shelterbelt/living snow fence concept in use on many county and state highways today.

Walter's aversion to the word "no" won him the respect of his fellow legislators during three terms at the statehouse. He was a staunch defender of conservation principles during his tenure in Des Moines. Walter spent 12 years on the State Soil Conservation Committee. He has served for many years on the Soil Conservation District and is currently assistant commissioner.

I first met Walter Hagen at the farm where a dozen or more school buses choked the driveway. It was "Conservation Education Day," a time for all Allamakee County sixth graders to get their annual dose of conservation and "Hagenism." Groups of students dotted the landscape as they listened to fisheries, wildlife, forestry, and soil conservation experts explain various examples of good conservation practices. One group clustered around a man in the midst of an area planted to evergreens. As I approached, periods of silence followed by unified laughter told me the teacher had complete control of his audience; the kids were listening and learning. Walter's animated face told me he was enjoying the experience, admiring his young "plantation" with a smile; continuously pruning, shaping and stimulating.

Later, I followed Hagen around the farm, absorbing as much of his rapid-fire show-and-tell as possible, while admiring the place. After half-jogging up a steep hill, we paused, mercifully, for a quick breather. The Hagens have planted a variety of trees on the farm, but the well-managed woodlot laced with native walnuts beside us was a favorite. The tall, straight trees were some Walter had planted in 1936, and were about ready for harvest. Many subsequent plantings have been made for experimental and demonstration purposes in cooperation with area foresters. This year, three acres of walnut seedlings were added and Walter said with a wink, "I'll be around to harvest veneer logs out of them!"

Walter Hagen is a land steward, innovator and motivator. He continues to demonstrate that woodlands, rich soil and clean water are resources in need of special care. His philosophy — that good farming and conservation are the same — has been planted many times. In Allamakee County it's beginning to grow.

Iowa Forests: A History of Value

Ron Johnson

Homesteaders in much of Iowa faced a vast, treeless prairie (right). The soil was rich but the lack of wood was a major problem. Many farmsteads and towns still have large silver maples (above) and other fast-growing species planted by settlers.

By Reinee Hildebrandt

"Verdant vales, interspersed with towering oaks" was how Iowa's woodlands were described in John B. Newhall's *Guide for Englishman* around 1832-1844. Yet when the settlers arrived in Iowa they found more disconnected woodlands on banks of perennial streams, clay hills, sandy and rocky ridges than verdant vales interspersed with towering oaks. Although, these areas did exist.

The state was a prairie state where dangerous prairie fires raged over miles and miles of countryside. These fires kept the forest resources, which the pioneers needed so desperately, to a minimum by restricting them to stream bottoms or areas protected by natural fire breaks.

There were three essential natural resources that the pioneers needed — food, water, and woods. Forest land was in very high demand for building houses and other buildings, for heating homes, and for fencing. Iowa only had 19 percent of its acreage in timber. Those trees were old and often scrubby, storm-tossed and fire-scarred.

Woodland resources were important to the settlers' choice of where to live. Iowa's lack of woodlands actually slowed the settlement of the state and when Iowa was being settled the property near a good supply of wood was the most demanded. In Cedar County in 1850 to 1870, wooded lands were worth $10/acre, and prairie land (which is now highly valued crop land) could be had for the asking. In other cases when all the land was sold for $1.25/acre (in accordance with the Homestead Act) forest land often had to be purchased at second rates from $8 to $15 per acre.

Those settlers who were not fortunate enough to have a wood supply of their own had to purchase materials. According to Dr. George W. Thomson, Dept. of Forestry, Iowa State University, the cost of fencing was a severe burden to those who settled on the prairie. While it cost $50 to purchase 40 acres of homesteaded prairie, it would cost $60 to fence it.

Woodlands were essential to the settlers, yet some trees were more important than others. Settlers used certain species for certain purposes.

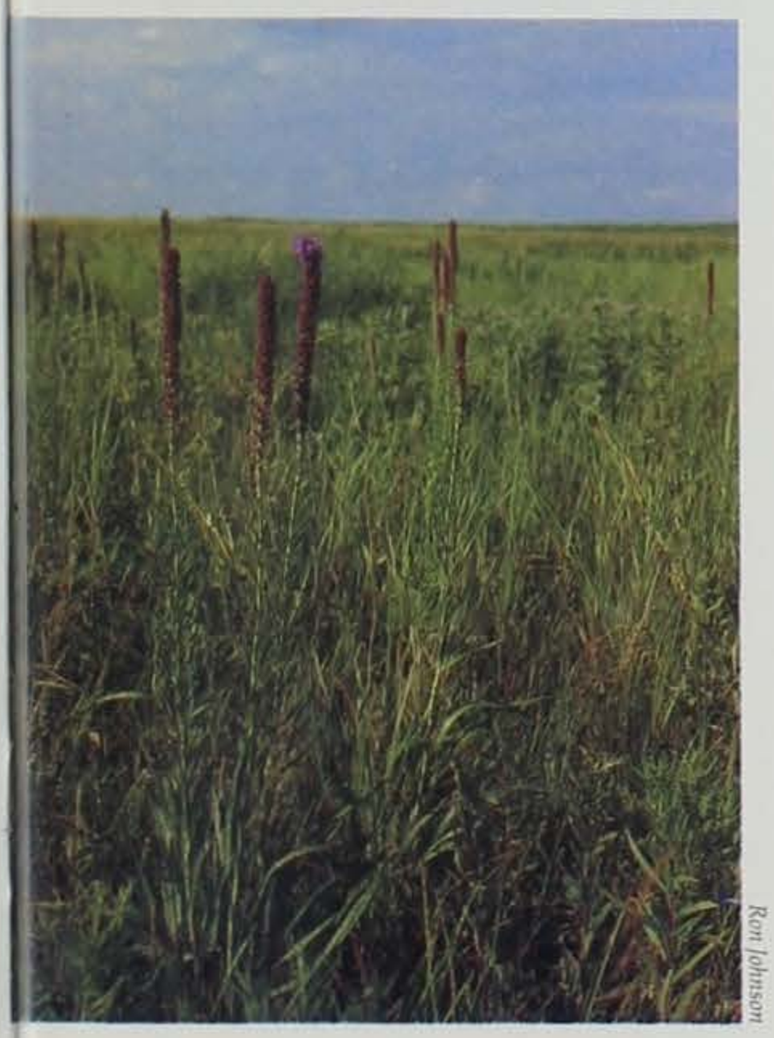
FENCING

Pioneers used whatever species were readily available for fencing materials. Locust, cedars, white oak, walnut, and hardy catalpa were highly demanded because they lasted for 12-25 years depending on the species. Less fortunate settlers who used ready supplies of soft maple, boxelder, cottonwood, elm, ash, and willow had to reset these short lived posts every three to six

years. During early settlement charring the end of the post that would come into contact with the ground was the early settlers technique for increasing the longevity of the post. Reports indicate this technique added five years to the post's life.

With the invention of creosote treatment for logs around 1910, it became economical to use posts of elm, ash, cottonwood, willow, maple, sycamore, red oak, and hickory. This treatment cost 15 cents per post and increased the service of the post from about five years to 15 to 20 years.

Another tree species — the osage orange *(Maclura pomifera)*, an introduced species, was also used for fencing. While some settlers attempted to use its obnoxiously hard wood as posts, most settlers planted it as living fence and shelterbelt. By the mid 1850's hedges as fences had become common practice across southern and parts of eastern Iowa. The osage orange or "hedge" tree, as some people called it, was easily transplanted. It could tolerate both wet and droughty soils, had no disease or insect pests, and could tolerate both extreme winds and temperatures. Its thorny branches provided an impenetrable barrier to livestock. Once it was established, which took several years, the properly maintained hedge provided a legal fence for the landowners.



Ron Johnson

BUILDINGS

The black walnut and the mighty oaks were used for a number of products such as houses, barns, sheds, railroad ties, and fuelwood. Many barns were made of black walnut because the heartwood is naturally durable. The red and white oak were the best oak trees for buildings. However, the bur oaks had their own attraction to the settlers. Settlers who arrived from the east had expectations of "verdant vales, interspersed with towering oaks." In some places they found parklike stands of bur oaks called "oak groves" or "oak openings". These areas were favorite homesteads.

URBAN FORESTS

Since these parklike areas were not available for all the settlers, other settlers had to homestead on the great prairie. Here they had to plant trees to provide shade, shelter, and fuelwood. These settlers were accustomed to forest and tree-lined streets of the east. They needed fast-growing trees that were hardy and adaptable. In some cases, the tree's appearance was only a secondary criteria for choice. Boxelder *(Acer negundo)*, silver maple *(Acer saccharinum)*, and eastern cottonwood *(Populus deltoides)* were first choices because of their fast growth rate. Silver maple was one of the most popular shade trees especially of prairie towns of western and central Iowa. The maples were planted side by side with American elm, which has a medium growth rate, when there was room for trees of their size.

FOOD

Food was another requirement of the settlers which the woodlands were used for. The woodlands contained both plants and animals useful to the settlers. Squirrels, deer, opposums, and raccoons were plentiful as a source of meat. Walnut trees, mulberry trees, gooseberry bushes, hazelnut bushes, raspberry and blackberry bushes, and rose hips from rose bushes, provided nuts and berries for the settlers. Maple trees and bee hives in hollow trees provided natural sugars for the person with a sweet tooth. A variety of mushrooms such as the common morel were available. Other plants such as the common woodland violet were used for medicines.

THREAD AND CORD

The red mulberry bark contains very tough fibers. These fibers have been used by Choctaw Indians in Southeastern U.S. for making cloaks and by the Spanish conquistadors for ship ropes. Iowa's pioneers used these materials also for ropes and fibers. The basswood trees tough, fibrous inner bark or "bast" was used for making cords, thongs, and ropes.

RECREATION

Trees, believe it or not, were also used for recreation. Willows and basswood were used for whittling "folk lore" toys. Whittling on these soft woods was in itself a form of recreation. Willows had a special recreational use all their own. In the spring when the bark was slippery they could be made into willow whistles. The woodlands themselves were also used by children taking hikes to pick wildflowers or walking barefoot down a woodland stream.

The woodlands were more than a group of plants to these early settlers. They were their existence. Early settlers relied on the woodlands for food, shelter, heat for winter warmth and for cooking, food, and recreation. They were a vital part of early settlers' lives. To them elimination and ruination of the woodlands would have been a foolish gesture. Their day-to-day living relied heavily on Iowa's woodland resources. Perhaps it is time for today's Iowan's to reconsider the importance of trees in their lives.

REFERENCES

Thomson, George W. and H. Gene Hertel. 1981. The Forest Resources of Iowa in 1980. Proc. Iowa Acad. Sci. 88(1):2-6, 1981

Reinee Hildebrandt is a forestry extension assistant with the Iowa State University Extension Service. She is currently working on her Ph.D. at ISU. She has been with the Extension Service since 1981.

WARDEN'S DIARY

By Jerry Hoilien

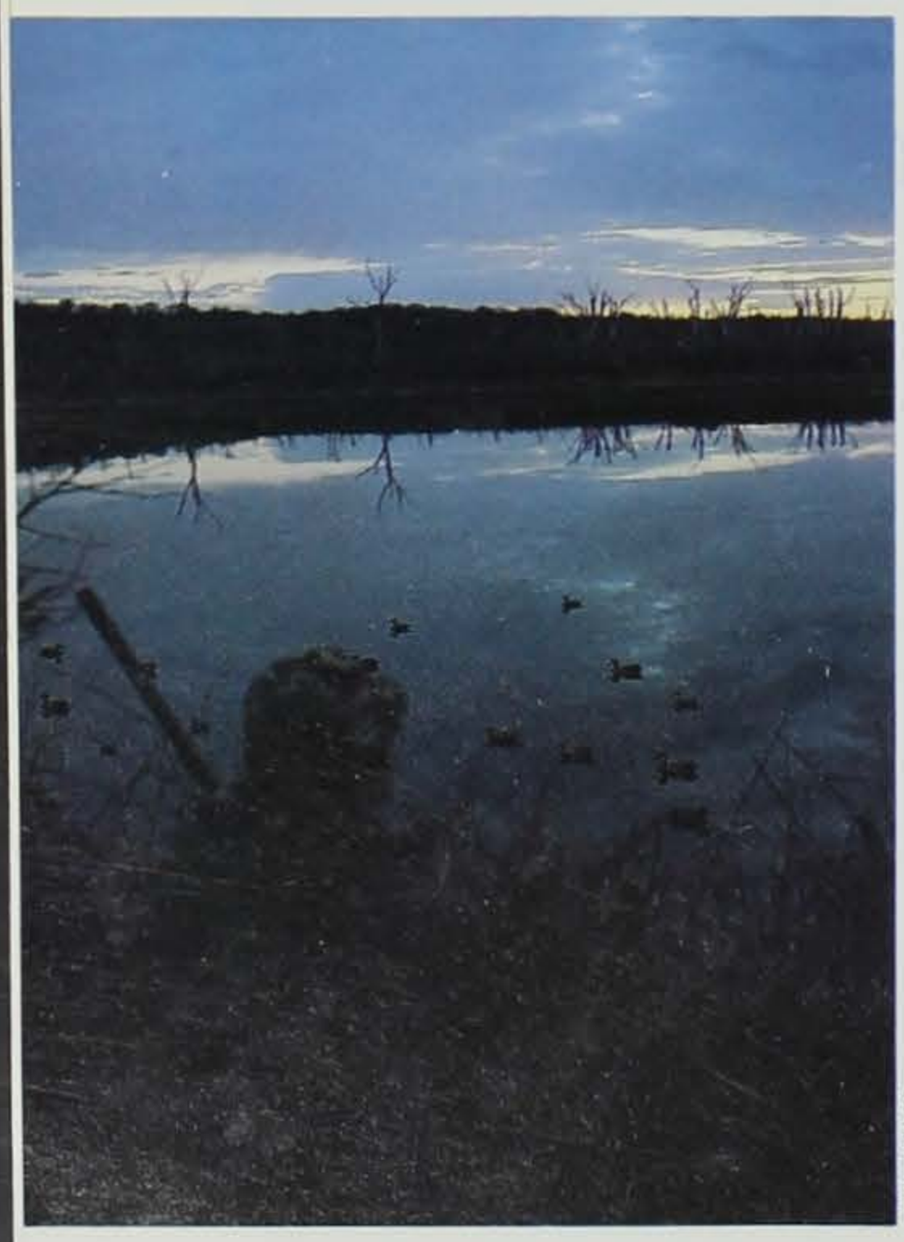
It was a gray morning and the ducks would be late leaving the marsh. Winter wasn't far away.

It was dark out there, but it wouldn't be long before the marsh began to come to life. It was just beginning to look lighter in the east. Bum, my golden retriever partner moved restlessly in the bow of the canoe.

Boom! Boom! Boom! The tranquil sounds were shattered by an early shooter. It was time for the warden to go to work. They had to be shooting more at the sound of wings than by sight.

"First year hunting — guess I got excited" was his only excuse. He'd have to explain that to the judge, along with too many points on the ducks he'd killed.

"You don't have to shoot, you know," I explained. "Just watching can be an important part. Take your time, you have all day. Really learn to enjoy the sport. Watch the birds turn, cup their wings, come to your call, and settle into the decoys. That's what this is all about. Not a couple of quick shots in the dark."



Ken Formanek

I remember hunting with a good friend, Doc Bray, one day and we'd waded way out in the marsh and chased lots of birds out just getting out there. We had just settled down on a rat-house with good cover around as they started coming back.

"Look, Doc," I pointed to a flock of mallards with their wings cupped and locked, dropping down to the water in front of us. "Right behind them, coming in high" he whispered. They just settled as two more groups came winging past and turning as a hen, not ten yards away, gave a beautiful "lonesome hen call," just like the book says. Doc was grinning from ear to ear as flock after flock came pouring in. We were soon surrounded by quacks, splashes, chuckles, and whistles.

I whispered, "Doc, what do you think of that? Beautiful isn't it?"

He replied, "If we shoot, they'll all leave!"

Neither of us fired a shot. Sometimes smelling the daiseys is a lot better than picking 'em!

I worked the marsh all morning and was enjoying the day. All the hunters had left and Bum and I had it all to ourselves. I needed a couple of ducks for Vernon Huffman, a good friend of mine so I poured a cup of coffee and loaded my shotgun. Wasn't long before two widgeon swung low about a hundred yards away. A feed chuckle or two brought them around and right in front of me. The first dropped, but the canoe tipped too sharply and I missed an easy double.

I don't recommend hunting with a dog out of a canoe, especially a big golden retriever weighing 90 pounds. Not only is it bad when he gets out, but getting him back in if you're alone in the canoe is no easy task in deep water. A splashing in the weeds revealed my not-so-dead widgeon and this proved too much for Bum. He reared up, planted both front feet on the gunwale and got ready to leap. With too much weight on one side my balance was lost, to say nothing of my pride as the water rose past my eyes. Looking up from there, I thought how strange duckwort looks from the bottom side. It wasn't as cold as I thought it would be, but as my head came up, my feet tried to float in front of me. I was wearing chest-waders and I had to concentrate to push them *down* and allow them to fill with that COLD WATER! Once I was upright, I could see Bum looking curiously at me from the upright canoe a few feet away. I imagined he was thinking, "What are you doing in there? That's my job!"

Remembering how many people panic when they fall in cold water with waders on, I swam slowly towards the drifting canoe. I remembered winning a steak supper off a bunch of rookie wardens years ago who bet against my swimming the length of a pool with my chest waders on. They don't pull you down if you don't panic.

The canoe was drifting slowly away but my life cushion and paddle floated just a few feet away. I swam slowly, using underwater strokes. I've swum for years (even took a state championship in high school) but that cushion sure felt comforting as I pulled it to my chest. The cold was beginning to hit me now and I could feel it affect my strength. My arms were beginning to weaken. I tried to touch bottom, but it just wasn't there. Moving my arms faster to keep them warm, I caught up with the canoe. Bum whinned sympathetically but wasn't much help. I spotted a big log sticking partially out of the water across the slough and it took me quite awhile to reach it. Climbing up higher was the only way I was able to get those heavy water-filled waders high enough to allow me to roll into the canoe without tipping it over.

Bum tried to help by licking my face. Some help! Picking up the paddle I thought, "What was I doing when all this started? Oh yes, where did that duck go?"

We finally retrieved our duck and headed for shore, hoping there would be no other hunters around the car to witness this "reasonable effort" to retrieve a duck. There wasn't and I got home to a hot shower and warm clothes.

Whatever you do, please don't tell Larry Moore or any of my neighboring wardens I got dumped, will you?

IOWA WATERFOWL BANDING

Unraveling the Mysteries of Migration

By Lowell Washburn

The mallards had quickly crossed the cattail expanse of the marsh and now hovered overhead. The flock had been lured here by the large concentration of ducks already busily engaged in feeding on a hillside which rose from the marsh edge. The mallards banked, and their silvery wing linings flashed in the morning sun as the birds lost altitude. Soon they settled in to help in the greedy cleanup of shelled corn which lay liberally strewn about.

As the minutes passed, more flocks rose from the marsh, with each group on an apparent beeline course for the hillside. Soon the ground literally swarmed with waterfowl. As each new bunch landed, its members momentarily stood statue-like with heads raised, ready to leap back into the air should any hint of danger be detected. Then, certain that all was well, the birds got down to the serious business of filling their gullets.

But the ducks were mistaken, for hunkered in a blind not sixty yards away was state waterfowl biologist Jim Hansen. He had been there since before dawn, feeding mosquitoes and keeping a silent vigil as the flock grew in numbers.

In his hands the biologist cradled an electric detonator connected by wire to a series of rockets, which were in turn attached to a huge net that lay coiled alongside the feeding birds.

Hansen nervously fingered the detonator and glanced at his watch. The idea of waiting for even more birds was tempting but risky. Should a mink, hawk or some other danger appear, the ducks would spook and all the work, planning and waiting would be in vain. Things like that had happened before.

Peering through a tiny hole in the blind, Hansen watched as four more mallards settled to the ground.

Lowell Washburn

Deciding to go for the shot, he mashed the plunger and simultaneous explosions shattered the morning stillness. The smoking rockets arced over the flock while the net, like a striking serpent, followed. Instantly the ducks were airborne, but it was too late. They were already imprisoned beneath the collapsing web.

Racing from the blind, Hansen was joined by the wildlife crew which has been waiting at a safe distance concealed by a knoll. Quickly, the team began to remove the fowl, mallards, teal and wood ducks from the net. After being aged and sexed, each duck was marked with an individually numbered aluminum legband which would remain with the bird for life. Finally, each frightened but unharmed duck was released. In less than an hour, the birds had been processed, and quiet had returned to the marsh.

Each year, scenes like this are repeated dozens of times across Iowa wetlands as migratory waterfowl are netted, driven into corrals or lured into baited wire traps for banding. Often referred to as "circles of knowledge," these bands are currently being used to help unravel many of the mysteries surrounding this fascinating and complex group of birds. In many instances, they are providing otherwise unobtainable insight into the realms of waterfowl biology, which in turn allows conservation agencies to more intelligently care for the long-term needs of this precious resource.

In Iowa, the DNR begins its annual banding activities with mid-summer Canada goose roundups. These events are timed to occur when resi-

Lowell Washburn

Lowell Washburn

Lowell Washburn

dent breeding populations of giant Canadas are flightless due to the summer molt. The most spectacular of these events takes place at Winnebago County's Rice Lake Wildlife Unit where anywhere from 500 to nearly 700 geese may be captured on a single drive. By late July, most Canadas regain the power of flight and biologists focus their attention on ducks, with a special emphasis on locally nesting mallards and wood ducks.

At the close of the banding season, DNR personnel prepare detailed schedules which are forwarded to the U. S. Migratory Bird Banding Lab at Laurel, Maryland. There, each individual bird's species, sex, age and ID number, along with place and date of capture are entered into the Lab's computer bank. (To avoid confusion, all North American banding activities are coordinated through the U. S. Fish and Wildlife Service.) Once those numbers are stored, it is a game of wait-and-see.

When eventually reported by hunters or other persons finding banded birds, those ID numbers begin to pay big dividends. The resulting information is used to document mortality and survival rates, trace migration routes, pinpoint critical wintering grounds, and also plays a major role in the formation of hunting regulations.

Band returns have revealed that most Iowa-reared mallards winter in the food-rich wetlands of Arkansas and Louisiana. Wood ducks are likely to turn up along the wooded river bottoms and swamps of those same states, although a few of the more adventuresome may fly on to winter in Cuba.

But without fail, the most dramatic returns of Iowa banded waterfowl come from that undisputed long-distance traveler of the flyways — the blue-winged teal. Some classic examples of the blue-wing's wanderlust came from a group of teal captured at Rice Lake in early September. During October, two of these birds were reported by hunters; one was shot along the south coast of Old Harbour, Jamaica, and another was bagged near the village of Iztapa, Guatemala. Equally amazing were the blue-wings banded in Iowa during September and recovered just weeks later in

Quebec and Ontario. Apparently, these tiny speedsters traveled north for several hundred miles just to see what the country looked like up there before turning around to head for South America.

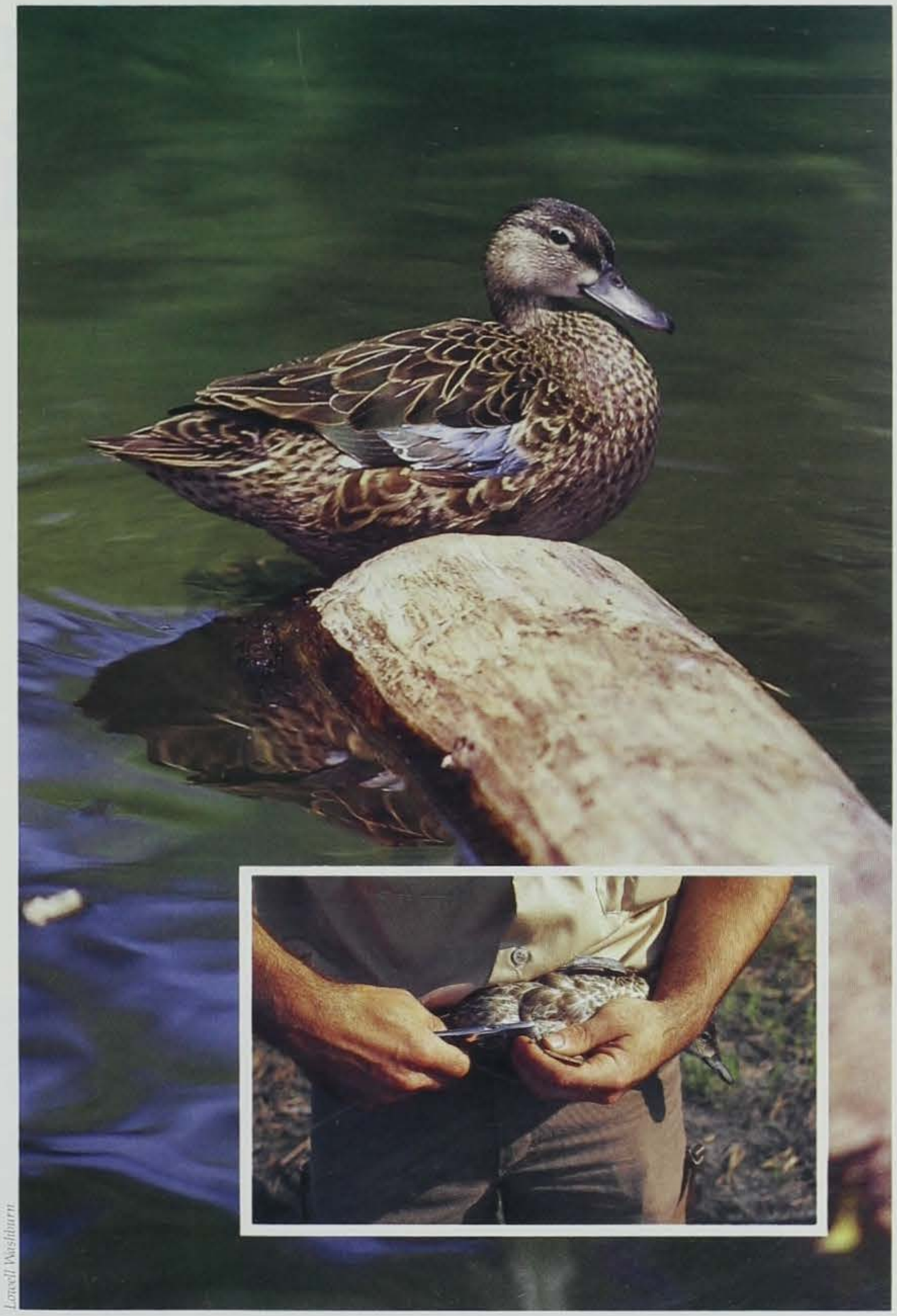
Unfortunately, however, not all bands recovered by hunters are reported. In fact, on a nationwide basis, it is estimated that only one hunter in three who shoots a banded mallard will bother to respond — a frustrating phenomenon known as the "dead-end recovery."

Why? In most cases, it is simply because the hunter does not wish to surrender the band. After all, when friends stop by to visit, duck and goose bands do make pretty good items for show and tell, and it is a bit fashionable these days to have a band or two strung on the lanyard of a favorite duck call.

Actually, neither the Iowa DNR nor the Fish and Wildlife Services wishes to deprive anyone of these trophies. In other words, keep the band. But if you are fortunate enough to bag a banded duck or goose this fall, here's what to do. Simply send the number, along with the date and location you shot your bird, to the address stamped on the band. In return for your effort, you will receive a second souvenir, a certificate of appreciation that will tell when, where and by whom the bird was banded.

Waterfowl banding is an expensive and labor-intensive proposition that involves the efforts of field technicians, biologists, statisticians and scientists. But it is the person who actually recovers a banded bird who ultimately becomes the most important player in this drama of the flyways. Without his or her cooperation, the effort is in vain. Waterfowl bands can only become circles of knowledge when we all do our part.

Lowell Washburn is an information specialist located in Clear Lake. He joined the department in 1984.



Lowell Washburn

Lowell Washburn

Many species are banded, including Canada geese, mallards and wood ducks (opposite page) and blue-winged teal (above). Hunters should send in information, keep bands.

Iowa Joins in Monitoring

Acid Rain

By Robert C. Buchmiller

Does acid rain exist in Iowa? How bad is it? Where is it coming from? These are some of the questions that the National Trends Network program in Iowa will attempt to answer. The U.S. Geological Survey has begun operating two monitoring stations in Iowa as part of this nationwide network to determine the chemical nature of precipitation in Iowa, its relationship to the rest of the country, and to establish any trends in acid precipitation here.

The National Trends Network (NTN) is a nationwide precipitation-monitoring network. The National Atmospheric Deposition Program was given the responsibility to coordinate the project. The program is an effort to obtain and analyze precipitation data for the purpose of detecting trends in precipitation quality and to provide data to scientists involved in atmospheric research. The stations in Iowa are funded by the U.S. Geological Survey.

What is acid rain?

The measure of water acidity is pH. Values of pH range from 0 to 14, with 7 being neutral. Pure water has a pH value of 7. If the pH values are greater than 7 the water is said to be basic or alkaline. If the pH values are less than 7, the water is acidic. Vinegar has a pH of about 3.

The acidity of water is affected by the material dissolved in it. Some substances tend to make water either acidic or alkaline, whereas others act to buffer the water to prevent large pH changes. When pure water is exposed to the atmosphere the water tends to become acidic due to reactions with the carbon dioxide and other gases in the atmosphere. Under natural conditions rainwater may have a pH of about 5.6. Acid rain, then, is defined to be rainwater with a pH of less than 5.6. It also is possible for any of the other forms of precipitation to be acidic.

What causes acid rain?

The principal contributors of acid rain are sulfur and nitrogen acids. Other chemicals that may effect the pH of rainwater are hydrochloric and carbonic acid, and ammonia, calcium, iron, aluminum and organic acids. Some chemicals, which by themselves are not acidic, combine and react in the atmosphere to cause acid-forming chemicals. It also is known that many natural processes, such as volcanic eruptions, forest fires, and lightning, contribute acid-forming substances to the atmosphere. However, the significance of their contribution to the total acid-rain problem is not known.

This mixture of materials in the atmosphere in varying concentrations and in the presence of such things as ozone, sunlight, and ultraviolet light can develop complex chemical reactions that create the chemical quality of our rainwater. The reactions and the causes of the reactions are not well understood at this time, but there is evidence linking acid rainfall to man-made emissions of sulfur and nitrogen oxides.

What are the environmental effects of acid rain?

Two of the most important potential hazards of acid rain are damage to aquatic ecosystems and agricultural production. The typical pH of a freshwater lake usually is slightly alkaline, between 8 and 9. This is due to the type of materials that rainfall must flow through and over to reach the lake. The lake-bottom material usually is of a composition that also neutralizes acid water. Iowa has an abundance of limestone and sedimentary materials that are natural buffers to any acidic runoff that may be entering lakes in the state, and it is unlikely that acidification of natural waters will ever be a major water problem in Iowa.

Other parts of the country and the world are not as fortunate. Much of the northeastern United States, southeastern Canada, and Scandanavia have thin soils overlying igneous bedrock. This type of geologic setting provides little buffering capacity to acidic runoff. There is evidence that surface waters in these areas are becoming increasingly acidic. It is not clear however, whether this increased acidity is pat of a natural process related to the types of watersheds, the geology, and the naturally acidic nature of rainfall or whether it has a relationship to man's effect on rainfall chemistry.

Effects of acid rain on agriculture are more difficult to quantify. Actual reports of acid rain causing damage to crops or soil are rare. Laboratory experiments have been the source of most of the agriculturally related information. Simulated acid rain has been shown to cause lesions on foliage and to slow important soil microbiological processes. Acid rain, in some cases, is a good fertilizer and adds significant quantities of nutrients to the soil. The effect of simulated acid rain on soybeans, for example, is unclear. Growth rates of soybeans have been shown to have both increased and decreased under a variety of experimental conditions.

The strategy for the NADP/NTN network is to maintain uniform sampling methods, uniform analytical techniques and a commitment to long-term monitoring. Sites are selected on a regional basis to be representative of major physiographic, agricultural, aquatic, and forested areas. Also, each site is selected to ensure that the information collected is not biased by any local interferences, such as powerplants and industries. Instruments

are located at each site so that they are not obstructed by nearby buildings or trees, or interfered with by grazing animals.

Instruments at each site include a precipitation collector equipped with two buckets for wet and dry atmospheric deposition, a recording raingage to accurately measure the quantity and duration of precipitation and a back-up raingage.

The precipitation collector consists of a platform with a moveable lid that fits over one of two collecting buckets. When precipitation occurs and wets an electronic sensor, a drive mechanism is actuated that moves the lid from one bucket to the other. In this way one bucket is exposed to the atmosphere only during precipitation. Analysis of the contents of the two buckets can then determine the chemical nature of the rainfall and the dry atmospheric deposition.

The recording raingage is a weighing-type gage. Precipitation enters the gage through an opening of known area and is deposited in a bucket inside the gage. This bucket is part of an accurate scale device which causes a pen to move on a paper chart in proportion to the quantity of rain in the bucket. The raingage also is equipped to record the times at which the lid on the rainfall collector moved from one bucket to the other.

Observers at each site inspect and maintain the equipment on a weekly basis. Each Tuesday the wet-sample bucket is removed and replaced with a clean sample bucket. The raingage is emptied and the chart is removed. The wet-sample bucket is then taken to a laboratory operated by each observer, where a small portion is removed from the sample bucket and measured for pH and electrical conductance, a measure of the quantity of dissolved material in the water. The wet-sample bucket is then weighed and shipped to the Illinois State Water Survey's Central Analytical Laboratory for further analyses. The laboratory analyzes the precipitation for pH, electrical conductance, and dissolved cations and anions such as calcium, magnesium, potassium, sodium, ammonium, chloride, nitrate, orthophosphate, and sulfate.

Where are the stations in Iowa?

Iowa has two NTN stations being operated by the U.S. Geological Survey, using personnel headquartered in Iowa City. One station is located at the Department of Natural Resourses' Big Springs Fish Hatchery in Clayton County near Elkader. The other station is located at Iowa State University's McNay Memorial Agricultural Research Station in Lucas County near Chariton. Both stations began operation in the fall of 1984. The data collected at each of these locations will be published annually by the U.S. Geological Survey. The Iowa stations are part of the NADP/NTN Network, which included 168 active sites in the United States and Canada in September 1984.

Where can I find out more about acid rain?

Additional information concerning acid rain and the monitoring efforts under way is available from the following agencies:

Illinois State Water Survey
605 East Springfield
Champaign, Illinois 61820

National Atmospheric Deposition Program
Colorado State University
Ft. Collins, Colorado 80523

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U.S. Geological Survey

U.S. Geological Survey

Belfort rain gauge with shelter removed shows weighing mechanism (left); and wet/dry collector with solar panel are both a part of the acid rain data-collection site at Big Springs Hatchery.

SLAB SIDES

By Lannie R. Miller

Autumn! The mere mention of the word brings to mind crisp, clear days, flights of geese honking under a full moon and a myriad of hunting and trapping seasons. Fishing, the sport that gave us so many happy moments during the spring and summer months is quickly forgotten. Unfortunately, anglers are missing some of the best crappie fishing of the year. True, spring is the best time for crappies; but for those who know what they're doing, autumn crappie fishing runs a very close second.

The first step to catching a mess of fall crappies is locating them. For simplicity's sake, let's look at crappie fishing in artificial and natural lakes separately.

Early fall crappies in many of our state's artificial lakes retain their summer habits, remaining suspended at ten to fifteen feet in twenty or more feet of water. As water temperatures drop, crappies also start to drop in the water column, arriving ultimately near the bottom of the lake by the time the lake freezes. Crappies exhibit very little shoreward movement during autumn in artificial lakes.

In Iowa's natural lakes, crappies move shoreward during fall. In early fall, crappies may remain in deeper water during the daylight hours, but venture toward shore to feed in the evening, remaining there until morning. Shorelines with riprap, brush or docks are ideal locations to try at this time. Waves beating into the shoreline stir up organisms which are fed on by insects and small fish which, in turn, are fed on by the crappie. As the water temperatures drop, crappies may stay near the shoreline all day, especially if it is windy and overcast.

The inlets to natural lakes are also fall crappie hotspots. Many natural lakes are fed through marshes or sloughs that are nursery areas for many species of fish during the summer. As the water cools in the fall, these small fish begin to move back into the main lake. Crappies, along with other predatory fish, concentrate near these areas to feed on this smorgasbord.

Now that we've narrowed the areas crappies inhabit in the fall, let's look at what tackle to use. The key to catching crappies anytime of the year, especially in the fall, is light tackle. Two or four pound test monofilament line is ideal. Ultra-light rods and reels and small terminal tackle complete the package. Bobbers should be small in size, no larger than a quarter. Number 6 and 8 hooks should be used when fishing with live bait.

Because colder water temperatures mean slower moving, less aggressive fish, slow-moving lures or live bait are best. The old crappie killer, a live minnow and bobber, is an excellent bait in the fall. The new slip bobbers, which allow the angler to reel the hook all the way in, are great for suspended fall crappie. Drift fishing with small, rubber-skirted jigs is a surefire way to catch suspended fish.

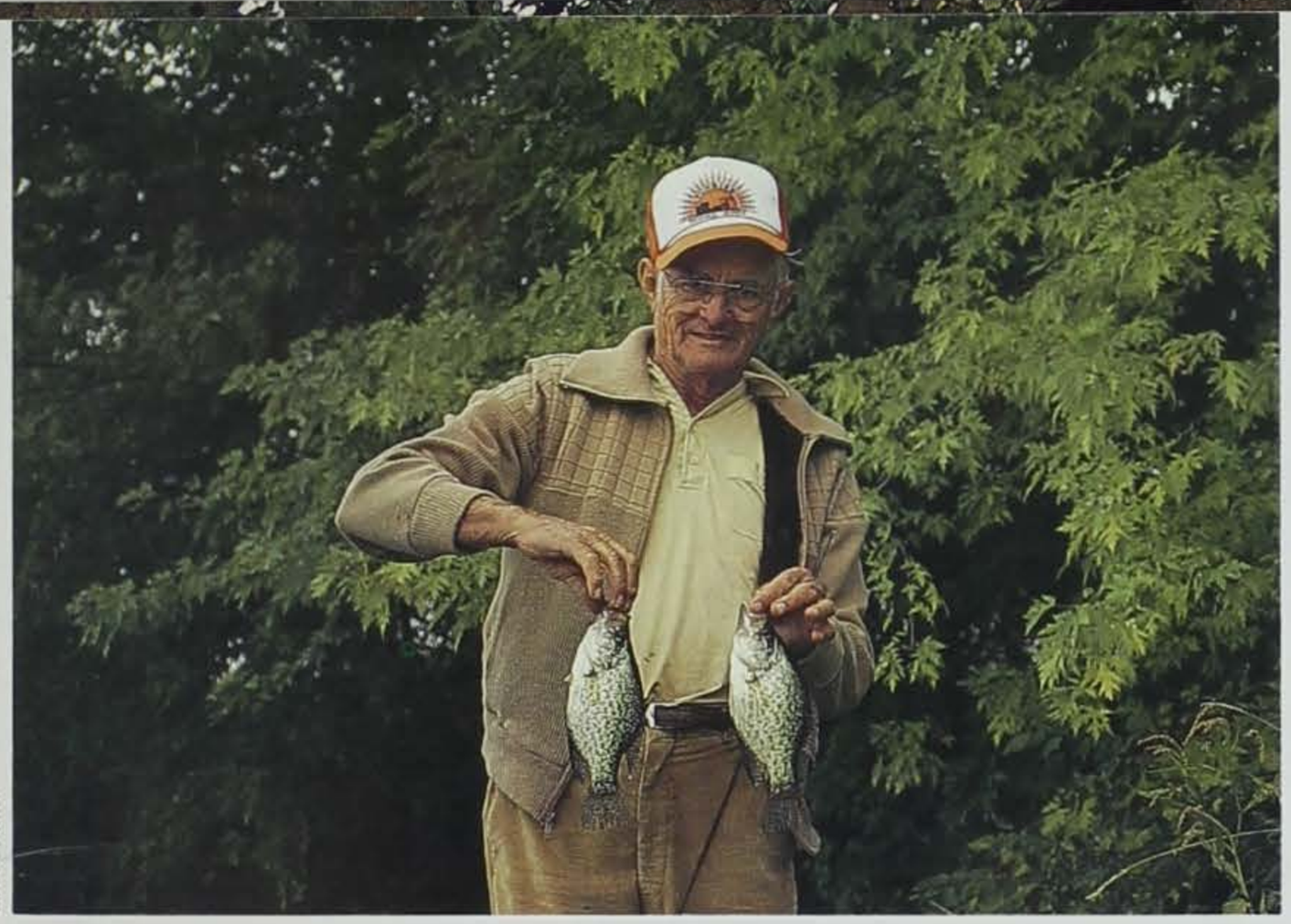
If the crappies are near shore, a variety of lures and techniques can be used. Because fall crappie are more lethargic, a small bobber to keep the lure at the proper depth retrieved slowly is deadly. Twitching or "popping" the bobber and jig, then stopping for a few seconds, entices even finicky fish. The bobber also indicates any slight but telltale movement.

Another trick that can add a lot of crappies to the stringer during the fall is adding bait to the jigs or lures. Recently, much has been written about scents relating to attracting fish and many new artificial products are currently being marketed. Live bait, such as waxworm, silver wiggler, piece of nightcrawler or a chunk of minnow will give off scent, and is an ace in the hole if the fishing gets tough.

This fall, when thoughts of many Iowans turn to ringnecks and raccoons, some will think of the crappie. They're fun to catch, delicious eating and the scenery and weather are great!

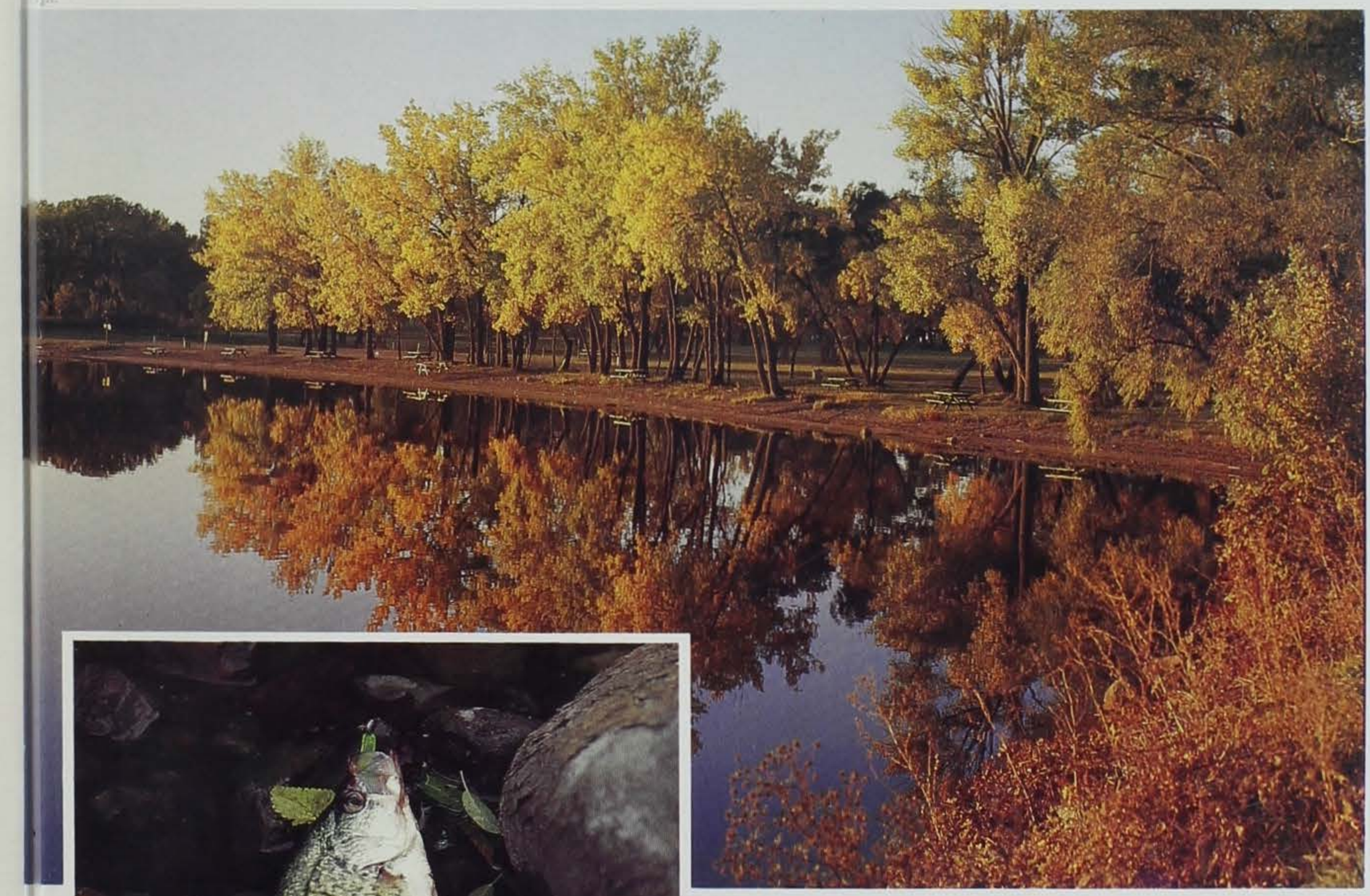
Lannie Miller is a fisheries biologist located at Black Hawk. He holds a B.S. degree from Kansas State University and has been in fish research since 1974.

Lannie Miller



Lannie Miller

Autumn on natural lakes is not only a beautiful time of year, it is a great season for crappie fishing.



Ken Formanek

Lannie Miller

"Cornfield Buck"
by Larry Zach
1202 S.W. Second Avenue
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Prints are available from the artist.